5

Using the DCS 200 Camera with a PC

This section describes the steps you follow when using the KODAK Professional DCS 200 Digital Camera (DCS 200 Camera) with your IBM PC or compatible computer, including:

- Setting the SCSI ID on the DCS 200 Camera.
- Preparing your PC by installing a SCSI card.
- Connecting the DCS 200 Camera to your PC.
- Using the Kodak Driver for Aldus PhotoStyler Software — a tutorial.
- Taking pictures while connected to the computer.

The DCS 200 Camera is designed to be connected to your computer. Once connected, you use the supplied software driver to save images onto your computer hard disk. You can then edit images and can save images

on your computer hard disk for use with other products. While connected, you can use both the camera and the computer simultaneously.

IMPORTANT: If you have an optional external hard disk connected to your camera you should remove it before following the steps below. If you want to access images from the external hard disk instead of the camera, attach the external hard disk to your computer by following directions in the tabbed section "Using an external hard," and then continue at "Using the Kodak Driver for Aldus PhotoStyler Software" on page 5-19.

We assume that you are familiar with the operation of your PC. If you are not, refer to the manuals and other learning materials that accompany that computer before continuing.

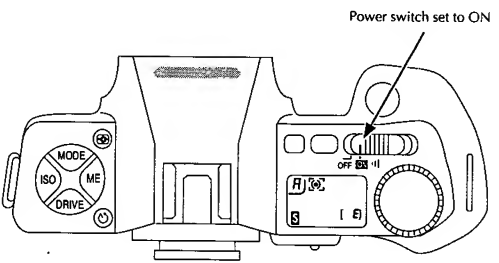
Setting the SCSI ID on the DCS 200 Camera

In these steps you will set the SCSI identification (ID) number for the DCS 200 Camera. Each SCSI device connected to the same computer must have a different ID number. SCSI ID numbers 6 and 7 are reserved for other purposes by the Future Domain SCSI host adapter, so do not use either of those two values.

1. If SCSI devices other than the DCS 200 Camera are connected to your PC, determine their SCSI identification numbers so that you can select a different number for the DCS 200 Camera. If necessary, refer to the instructions for those devices to determine how to find their numbers.

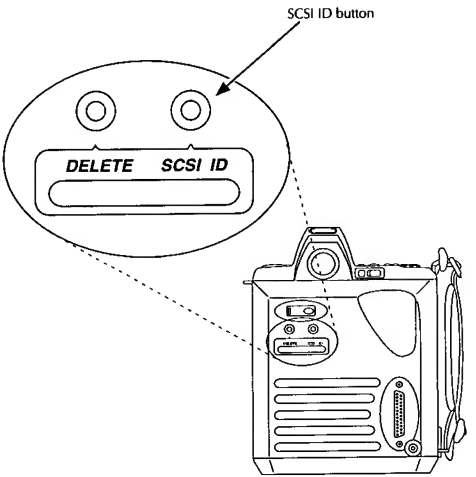
   IMPORTANT: Since you may connect the camera to different computers, or since you may change the external SCSI devices connected to the PC you regularly use with the camera, you should ensure that the DCS 200 Camera has a unique SCSI ID each time you connect it to the computer.

2. Turn on the Nikon camera by sliding the power switch to ON.



3. Wake up the system by lightly pressing the shutter release button.

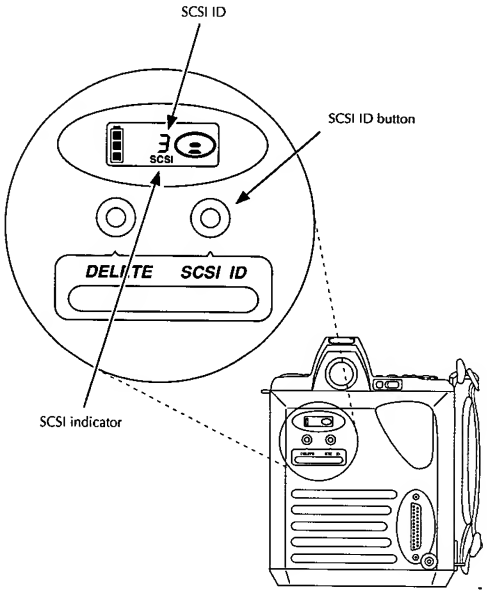
4. Locate the indentation on the back of the DCS 200 Camera labeled SCSI ID.



5. Press the SCSI ID button once with an object like a very blunt pencil or ball point pen; this action wakes SCSI mode. (Do not use a sharp object; it can puncture the button and damage the switch.) The characters "SCSI" — the SCSI indicator — appear on the liquid crystal display (LCD), as does a single digit from 0 to 7. That value is the current SCSI ID of the DCS 200 Camera.

NOTES: After several seconds of inactivity, the DCS 200 Camera turns off, and the SCSI indicator disappears from the LCD. If necessary, wake the camera by lightly pressing the shutter release button again.

If you are using a monochrome camera, in addition to the digits from 0 to 7, there is a "CF" choice. Use the CF choice, which stands for color filter mode, when using the monochrome camera with the KODAK Color Filter Wheel Accessory. (A separate instruction manual accompanies that optional accessory, which can only be used with a Macintosh computer.)



6. While "SCSI" still appears on the LCD, you change the current SCSI ID by pressing the SCSI ID button repeatedly. The ID rotates through the values 0 to 7 (and "CF" if you are using a monochrome camera). Stop when you have the SCSI ID you want. As mentioned earlier, do not use SCSI ID values 6 or 7, and do not use a number currently assigned to any other connected SCSI device.

Preparing Your PC by Installing a SCSI Card

The KODAK Professional DCS 200 Digital Camera (DCS 200 Camera) is a non-terminated SCSI device that connects to your PC. The camera *requires* that a Future Domain SCSI Host Adapter be available on your PC if you will use the software provided. If you already have this adapter installed, continue at "Making the SCSI Connection" on page 5-10. Since this adapter may not already be installed on your PC, we have included directions below for how to have such an adapter installed on your PC.

Refer to "Required SCSI Interface" on page 1-7 for the Kodak catalog number (and Future Domain number) of a SCSI Host Adapter for your PC; there is one catalog number for a card for the AT-style bus, and another for the Micro Channel bus. Order the appropriate card, depending on the type of system you have. The instructions below provide an overview of the steps required to ensure that the SCSI Host Adapter is properly installed and configured for the DCS 200 Camera.

> **CAUTION:** Only trained and qualified technical personnel should perform the following procedure. Contact your computer service professional to configure and install the SCSI Host Adapter.

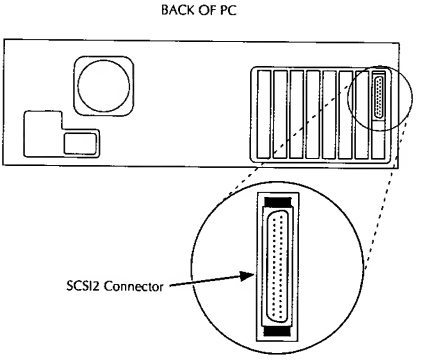
Individuals who will install the card should read all the manufacturers' instructions for both the computer and SCSI Host Adapter before installing the adapter in your computer, they should use care to prevent static damage to the SCSI Host Adapter card, and they should follow these steps.

1. Turn off the power to the computer and all peripherals.

2. Make sure the jumper indicated below is closed on the Future Domain SCSI Host Adapter you are installing. The jumper is closed when it is in this position: . Refer to the manual for your adapter card to determine the location of the jumper on your card.

If you have:	Close this jumper:
A PC with an AT-style bus (you are installing Future Domain No. TMC-1660).	Termination Power (jumper W4).
A PC with a Micro Channel-style bus (you are installing Future Domain No. MCS-700).	Termination Power (jumper W1).

3. Install the SCSI Host Adapter for your PC according to the manufacturer's installation instructions. When installation is complete, a SCSI2 connector should be available on the back of your PC, as shown in one example below. Different PCs have different connectors. The figures in this chapter are intended to illustrate a typical PC.



Making the SCSI Connection

In normal usage you may connect and disconnect the DCS 200 Camera from the PC on a regular basis; for this reason you may want to position your computer so that its SCSI2 connector is readily accessible.

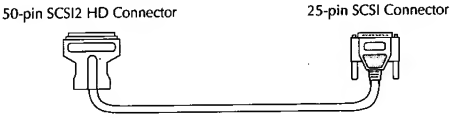
Continue below at "DCS 200 Camera as the Sole SCSI Device" (this page) or at "DCS 200 Camera Used with Other SCSI Devices" on page 5-12 depending on whether or not the DCS 200 Camera will be the only SCSI device to be attached to this connector.

DCS 200 Camera as the Sole SCSI Device

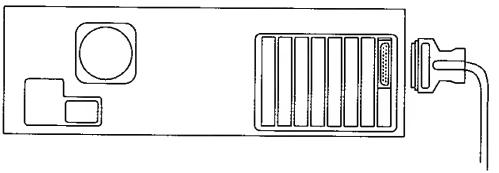
1. Turn off the DCS 200 Camera and the PC.

   IMPORTANT: Later when you connect and disconnect the PC and the DCS 200 Camera, make sure that both of them are off.

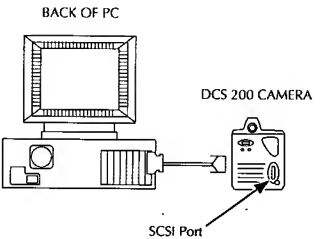
2. Place the DCS 200 Camera in a convenient position next to your PC.
3. Connect the AC battery charger/adapter to the camera as described in "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3. (Although this step is optional, we recommend it whenever the camera is connected to a computer.)
4. Select the SCSI cable with the 50-pin SCSI2 HD connector at one end and the 25-pin SCSI connector at the other end.



5. Attach the 50-pin SCSI2 connector to the SCSI2 port on the back of the PC. Make sure the cable connector is well seated by pressing it into place firmly, so that the spring-clips on the connector snap onto the SCSI port.



6. Attach the other end of the cable (25-pin SCSI connector) to the SCSI port on the DCS 200 Camera.



Skip the next section and continue at "Using the Kodak Driver for Aldus PhotoStyler Software" on page 5-19.

DCS 200 Camera Used with Other SCSI Devices

NOTE: If other external SCSI devices are connected to your computer, you may need to obtain a SCSI terminator to complete these steps.

Multiple SCSI devices are connected to a PC in a chain. If the DCS 200 Camera is one of multiple SCSI devices connected to your computer, it must be connected as the last device in the chain of SCSI devices since it only includes one SCSI connector.

The total cable length connecting all devices must not exceed 15 feet (4.6 meters).

You will need to determine if the connected SCSI devices are terminated or not. To do so, first look for an external SCSI terminator on the devices. Because some devices contain internal terminators, also check the instructions for your devices to determine if they are terminated internally.

We provide two sets of instructions. Follow the first set (this page) if none of the connected devices are terminated or if one of the devices is terminated externally. Follow the second set (page 5-15) if one of the devices — it should be the last device in the chain — is terminated internally.

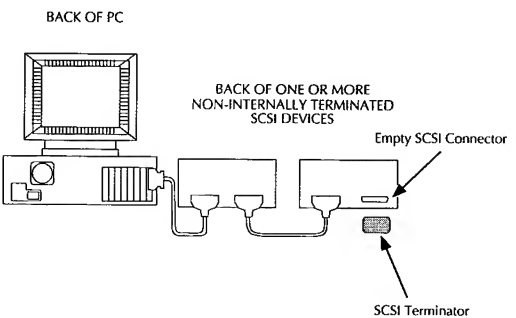
Follow these steps if none of the connected devices are terminated or if one of the devices is terminated externally.

1. Turn off the DCS 200 Camera, the PC, and all connected SCSI devices.

   IMPORTANT: Later, when you connect and disconnect the PC and the DCS 200 Camera on a regular basis, make sure that all devices are off.

2. Place the DCS 200 Camera in a convenient position next to the last device in the SCSI chain of devices connected to your PC.
3. Connect the AC battery charger/adapter to the camera as described in "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3. (Although this step is optional, we recommend it whenever the camera is connected to a computer.)
4. If there is an external SCSI terminator on an otherwise empty SCSI connector on the last device, leave it in place.

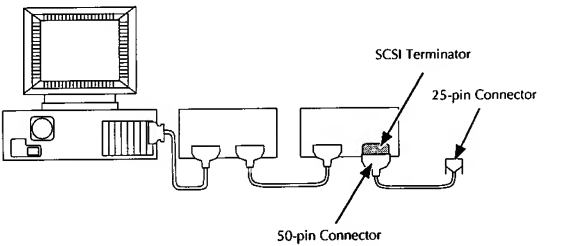
   If there is an external SCSI terminator between the end of a cable and a SCSI connector on a device, remove the terminator. Reconnect the cable. (Later, if you remove the DCS 200 Camera cable, remember to replace this terminator.)
5. If no terminator is connected to the empty SCSI connector on the last device in the chain, connect your SCSI terminator (not supplied by Kodak), as shown in the illustration below. Make sure the terminator is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



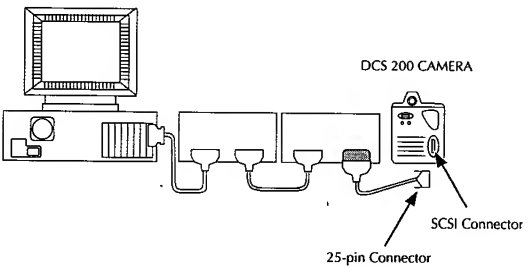
6. Select the SCSI cable with the 50-pin connector at one end and the 25-pin connector at the other end.

   IMPORTANT: Use only the cable supplied with the DCS 200 Camera; do not use a substitute cable.

7. Connect the 50-pin connector to the terminator on the last SCSI device in the chain. Make sure the connector is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



8. Attach the other end of the SCSI cable to the SCSI connector on the DCS 200 Camera.



Skip the next section and continue at "Using the Kodak Driver for Aldus PhotoStyler Software" on page 5-19.

Follow these steps if the last connected device is terminated internally.

1. Turn off the DCS 200 Camera, the PC, and all connected SCSI devices.

   IMPORTANT: Later when you connect and disconnect the PC and the DCS 200 Camera on a regular basis, make sure that all devices are off.

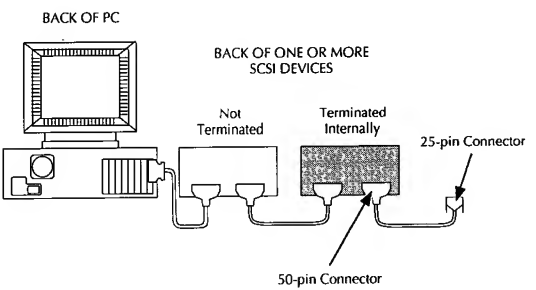
2. Place the DCS 200 Camera in a convenient position next to the last device in the SCSI chain of devices connected to your PC.

3. Connect the AC battery charger/adapter to the camera as described in "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3. (Although this step is optional, we recommend it whenever the camera is connected to a computer.)

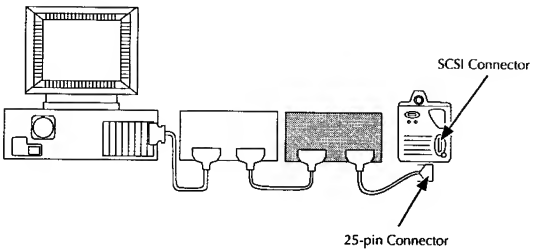
4. Select the SCSI cable with the 50-pin connector at one end and the 25-pin connector at the other end.

   IMPORTANT: Use only the cable supplied with the DCS 200 Camera; do not use a substitute cable.

5. Connect the 50-pin connector to the empty SCSI connector of the device that is terminated internally. Make sure the connector is well seated by pressing it into place firmly, and then pinch the thin wire clamps over its base.



6. Attach the other end of the SCSI cable to the SCSI connector on the DCS 200 Camera.



Connecting an Optional External Hard Disk to Your PC

If you want to obtain images from an optional external hard disk, instead of from the camera, remove the optional external hard disk from the camera and attach it to your PC by following directions provided in the tabbed section "Using an external hard disk."

Using the Kodak Driver for Aldus PhotoStyler Software

You can move images from the DCS 200 Camera or external hard disk to your PC by acquiring them while running your copy of Aldus PhotoStyler. To do so, you use the IMPORT submenu on the PhotoStyler FILE menu to access the DCS 200 Camera or external hard disk with a special software driver provided by Kodak. In the following instructions you will install the driver and use it to acquire images.

NOTE: This manual assumes that you are familiar with the operation of the PC, Microsoft Windows 3.0/3.1, and Aldus PhotoStyler. If you are not, refer to the instruction manuals that accompany those products.

Installing the Kodak Driver for use with Aldus PhotoStyler Software

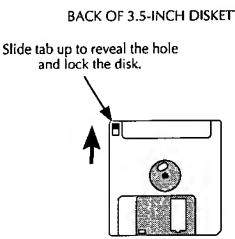
NOTES: If you have not already done so, complete and submit the enclosed Warranty Registration card. Also, please read the Software License Agreement at the front of this manual.

The following directions apply to PhotoStyler version 1.1A; later versions, as they become available, may require different steps.

In this section you will install the software driver provided by Kodak for use with Aldus PhotoStyler software. It allows you to acquire images from the DCS 200 Camera, or from an external hard disk that has been used with the DCS 200 Camera, into Aldus PhotoStyler. (Installing the driver is a one-time action; you complete these steps once, and do not repeat them each time you want to acquire images.)

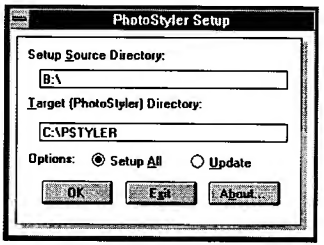
1. Turn on your PC.
2. If it has not been configured to start automatically, start Microsoft Windows in Standard Mode by typing WIN/S, then press Enter. (Standard Mode provides the fastest acquire times.)

3. Locate either the 3.5-inch or 5.25-inch diskette labeled "KODAK Driver for ALDUS PHOTOSTYLER Software for use with KODAK Professional DCS 200 Digital Cameras."
4. If you are using the 3.5-inch diskette and it is not write protected, protect it by sliding the plastic tab so that a rectangular hole appears through the diskette. For 5.25-inch diskettes, if the disk has an open, uncovered write-protect notch, tape it with a small tab commonly provided for this purpose by diskette manufacturers. These actions will protect you from changing the contents of the disk inadvertently, and may aid in preventing the spread of computer viruses to these diskettes.

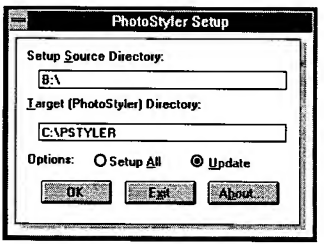


5. Place the diskette into an internal drive of your computer.
6. Open the Windows FILE MANAGER.
7. Use the Directory Tree to locate and open the drive containing the diskette.
8. Double-click on the README.TXT file and read its contents — the latest information on the camera and software driver; then choose EXIT from the FILE menu to quit the Notepad application.

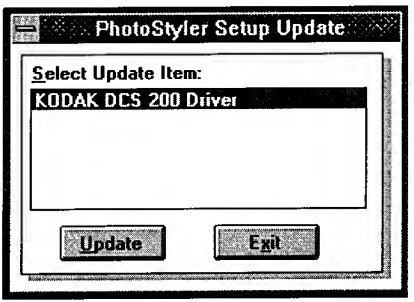
9. Double-click on PSSETUP.EXE.
10. Wait until the PHOTOSTYLER SETUP opening screen appears.
11. Press any key (or click the mouse button once); you see the PHOTOSTYLER SETUP dialog box asking you to verify the SETUP SOURCE DIRECTORY and the TARGET (PHOTOSTYLER) DIRECTORY.



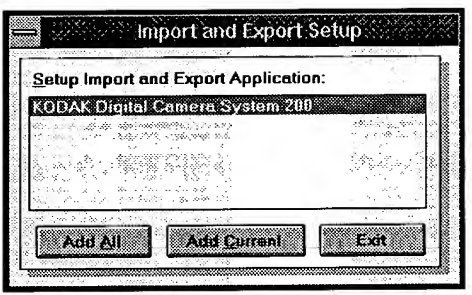
12. Enter the desired directories if they do not already appear.
13. Click UPDATE.



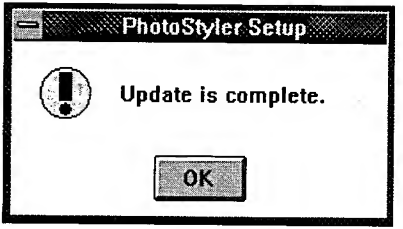
14. Click OK to continue the installation; the PHOTOSTYLER SETUP UPDATE dialog box appears, with KODAK DCS 200 DRIVER selected.



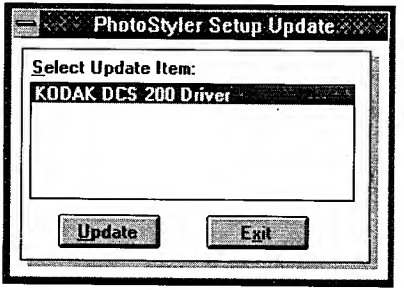
15. Click UPDATE; you see the IMPORT AND EXPORT SETUP dialog box, with KODAK DIGITAL CAMERA SYSTEM 200 selected.



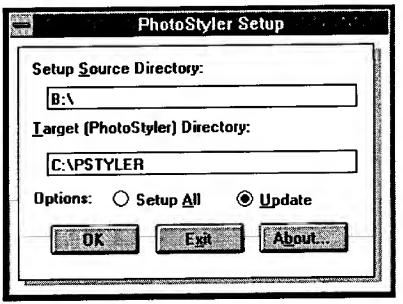
16. Click ADD ALL; a progress dialog window indicates progress in the installation of the driver.
17. Wait until installation is complete; you see this dialog box.



18. Click OK; the PHOTOSTYLER SETUP UPDATE dialog box reappears.



19. Click EXIT; the PHOTOSTYLER SETUP dialog box reappears.



20. Click EXIT to quit the setup application. The driver has been installed; you are back in the Windows FILE MANAGER.
21. Remove the diskette and store it in a safe place. (Although copying the driver is generally a one-time action, you may need the diskette again.)

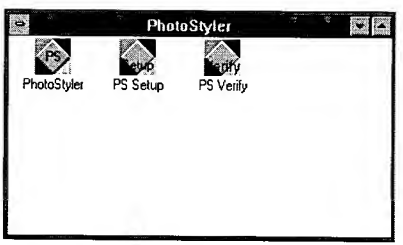
Accessing the Kodak Driver for Aldus PhotoStyler Software

Repeat the steps below each time you want to access the Kodak driver for Aldus PhotoStyler software.

NOTES: If you will be accessing images from an external hard disk that has been used with the DCS 200 Camera, and that is already connected to the PC, begin at step 6 below.

If you encounter difficulties while following these steps, refer to "Messages — Kodak Driver for Aldus PhotoStyler Software" on page 8-22, or "Troubleshooting — Kodak Driver for Aldus PhotoStyler Software" on page 8-32.

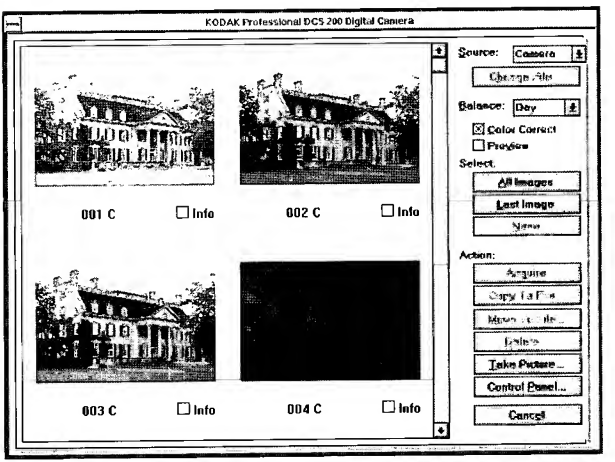
1. If the DCS 200 Camera and your PC are not connected, turn both off and connect them now by following the directions in "Making the SCSI Connection" on page 5-10.
2. Connect the AC battery charger/adapter to the camera as described in "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3. (Although this step is optional, we recommend it whenever the camera is connected to a computer.)
3. If your PC is on, turn it off.
4. Turn on the DCS 200 Camera by sliding the power switch to ON.
5. Wake up the camera by lightly pressing the shutter release button.
6. Turn on the PC.
7. If it has not been configured to start automatically, start Microsoft Windows in Standard Mode by typing WIN/S, then press Enter. (Standard Mode provides the fastest acquires.)
8. Locate and double-click on the Aldus PhotoStyler icon.



9. Choose KODAK DCS 200 from the IMPORT submenu of the Aldus PhotoStyler FILE menu. (The menu may show other options.)

   NOTE: OPEN from the FILE menu will not access the DCS 200 Camera or external hard disk.

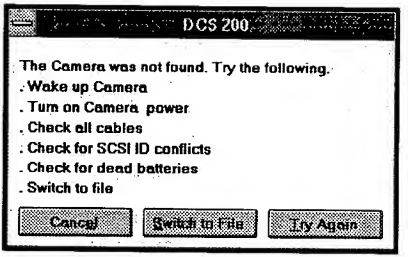
10. Wait as this window appears. If a single larger image appears, you can click the PREVIEW button to replace that preview image with the smaller thumbnail images illustrated below.



NOTES: If you are accessing images from an external hard disk that has been used with the DCS 200 Camera, skip this note and the next section and continue at the section "Viewing Images with the Aldus PhotoStyler Driver" on page 5-29.

If you are using a camera without an internal hard disk, you will only see the single current image in the window. As each new picture is taken, it replaces the single image in the camera and in this window.

Instead of the dialog box above you may see the following box. If you do, refer to the explanation of this message on page 8-29.



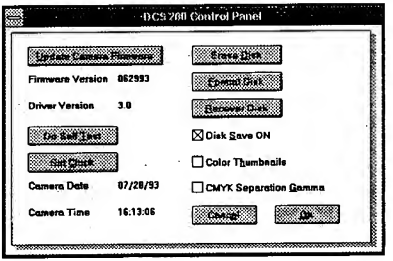
Updating Camera Firmware in the DCS 200 Camera

NOTE: Skip this section if you are accessing images from an external hard disk.

The DCS 200 Camera incorporates non-volatile memory that contains controls — called firmware — for most features of the camera. You can update that firmware yourself, which means you can keep the camera up-to-date as changes are made to the firmware, and you can perform some troubleshooting, all without sending the camera to a service center. By following the steps below the first time you use the PhotoStyler driver,

you will ensure that the camera contains the most current version of the firmware. You do not need to repeat these steps each time you use the driver.

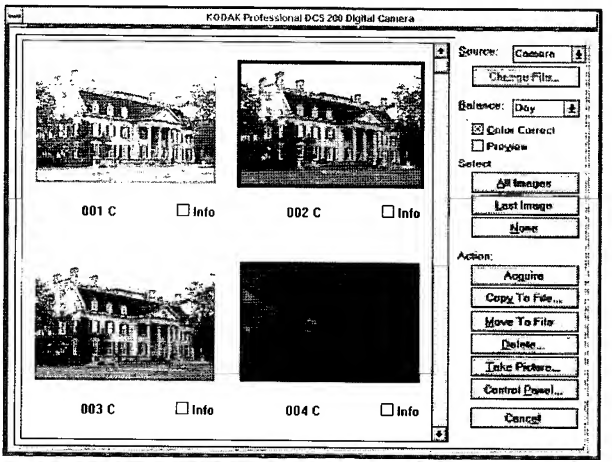
1. Click the CONTROL PANEL button. You see the dialog box below.



2. Click on UPDATE CAMERA FIRMWARE.
3. Wait approximately 45 seconds as the firmware is copied to the camera.
4. Click OK as needed to return to the main driver dialog box.

Viewing Images with the Aldus PhotoStyler Driver

You are now viewing the driver dialog box.



The image window in the driver dialog box displays thumbnails of images from the DCS 200 Camera hard disk (or from an external hard disk that has been used with the DCS 200 Camera). A thumbnail is a subsample of data from the full image. The thumbnails appear in the image window in the same logical order that images appear on the DCS 200 Camera hard

disk (or external hard disk that has been used with the DCS 200 Camera). The three-digit image numbers that appear beneath each image correspond to the image numbers used on the DCS 200 Camera. A "C" after the image number — if it appears —indicates a color image. Depending on the size and configuration of your monitor, you will see two or more thumbnails on each row, and two or more rows of thumbnails.

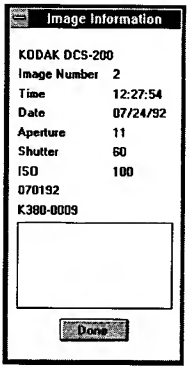
You can scroll through the images by moving the vertical scroll box or scroll arrows on the window, or by pressing the Page Up, Page Down, Home, or End keys on the computer keyboard.

1. Scroll, if needed, until the image you want to acquire appears in the image window.
2. (Optional) Click once on the small square "INFO" box beneath the lower right corner of an image; the information box on the next page appears on the screen.

   The data displayed includes, from top to bottom: the image number, time (displayed in 24-hour format) and date the image was made, the camera aperture, shutter speed, ISO setting, firmware version number (a date), and the camera serial number. The camera aperture and shutter speed appear in this window as they appear in the camera LCD panel and viewfinder. Additionally, a text box allows you to enter short descriptive material, up to 254 characters, regarding the image. (Refer to "Commands" on page 8-4 for additional information.)

   NOTE: The time and date are maintained by a permanent battery in the DCS 200 Camera. If the time and date in the camera are incorrect, you can update

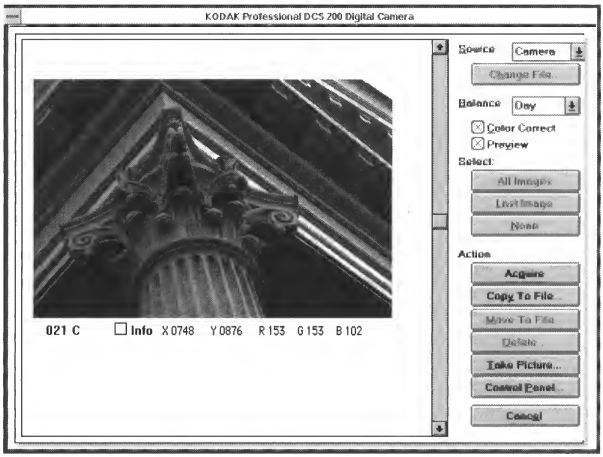
them with the SET CLOCK choice on the CONTROL PANEL of the image window as described in "Control Panel" on page 8-14.



3. If you have opened an information box, click on the DONE button to close the information box.
4. Click once on the image you want. A narrow border appears on the screen, surrounding the image in the window, as illustrated by image number 002 in the figure on page 5-29.

5. (Optional) Click on PREVIEW. You see a single, enlarged version of the image as below (we scrolled to image 021 and then clicked PREVIEW).

   The image appears in color on your color monitor if it is a color image. Data below the image indicate the image number, a "C" if it is a color image, the current X and Y pixel location of the crosshair cursor on the preview image, and the red, green, and blue values at the current cursor location.



Selecting the Color Balance for an Image

NOTE: This section applies only to color cameras or color images on external hard disks that have been created with the camera. If you are working with a monochrome camera, continue on the next page at "Acquiring Images with the Aldus PhotoStyler Driver."

In the following steps you will select an option to correspond to the original lighting conditions under which you took the picture. The option you select will be used for color correction by the driver when the image is acquired in PhotoStyler. The values associated with the option chosen from the BALANCE popup menu are substituted during the current acquire action. The values are used for color balancing subsequent images you acquire until you make another choice from the BALANCE popup menu. The actions described in this section do not affect the images stored in the camera (or on an attached external hard disk that has been used with the DCS 200 Camera); instead, these actions only affect the acquired image.

1. If you have not selected an image, and if you are not viewing that image in preview mode, select an image now by clicking on it, and then click the PREVIEW button.

   You can also perform the steps below while in the thumbnail mode. However, using preview presents a larger image, providing a better view of the changes you may make (in the next step) to the color balance of an image.

2. Read through all parts of this step and then make the appropriate choice from the BALANCE popup menu.
   - The DAY, TUNG, TungBG40, FLUOR, or FLASH choices correspond to daylight, tungsten, tungsten using a Schott BG-40 1mm filter (refer to "Optional Camera Equipment" on page 1-9 for availability information), fluorescent, or flash lighting conditions.

- The CLICK choice, which is always the preferred option, allows you to provide color balancing data by clicking on a white or light gray area of a thumbnail or a preview. (If there is no white or light gray area, choose another option, or refer to "Click" on page 8-8 for a technique using a white or gray card.) After choosing CLICK, the mouse pointer becomes a crosshair. Click on a white or light gray area of the image that is not overexposed. Choose a spot on the image where each of the red (r), green (g), or blue (b) values displayed on the line below the image are as high as possible, but lower than 255. White balance values are calculated based on the point at which you clicked.

  NOTE: When you click, if you see a message that one of the colors is saturated, select another point for balancing.

- The NONE choice can be used for images made under unusual lighting conditions when the other choices do not provide the desired results.

Now, select the choice you want from the BALANCE popup menu.

Acquiring Images with the Aldus PhotoStyler Driver

You are now ready to acquire an image from the driver into PhotoStyler.

1. Click on the ACQUIRE button; acquisition of the image begins. You can cancel acquiring by pressing the Esc key.

   NOTES: You can also double-click on the thumbnail image (not the preview image) as an alternate to the two-step process of selecting one image and then clicking the ACQUIRE button. Images can be acquired while in preview or thumbnail mode.

   Do not take a new picture while an image is being acquired.

The software driver provided by Kodak for use with Aldus PhotoStyler software incorporates color-correcting algorithms. They operate while acquiring an image by using data stored on the DCS 200 Camera with the image.

2. Wait until the image appears in a PhotoStyler window.
3. (Optional) Edit the acquired image using PhotoStyler features. If you know that you will be using only a cropped portion of the image, you may want to complete that cropping now while in PhotoStyler. This will result in a smaller file when saved to disk.
4. (Optional) Save the image to the computer hard disk. (You cannot save the image to the DCS 200 Camera hard disk.)
5. (Optional) Repeat the steps of the last several sections and acquire and save additional images.

Creating Monochrome Images with a Color Camera

You can use a color camera to create monochrome images. To do so, begin by exposing as you would for a color capture. There are then two methods you can use: convert to gray scale, and green channel.

Convert to gray scale. This is the preferred method, for it offers the best tonal rendition of the image, and should be used with color images that do not have high gain or noise levels. (High noise levels in images can be caused by extended exposure times and by using the maximum ISO setting.) To use this method, click Color Correct "on" in the driver, and acquire the image normally. Then choose GRAYSCALE from the PhotoStyler CONVERT TO submenu of the IMAGE menu to discard the color information. You are left with the monochrome image.

Green channel. Use this method for color images that contain high gain or noise levels. (High noise levels in images can be caused by extended exposure times and by using the maximum ISO setting.) To use this method, click Color Correct "off" in the driver (this eliminates blue information), and then acquire the image. Then choose RGB CHANNELS from the SPLIT RGB TRUE COLOR TO submenu of the IMAGE menu and work only with the data from the green plane (G). This produces a sharper image than reducing the other color levels to zero, since half of the pixels in the imager are green. As a result, the green plane has the most information when images are acquired in PhotoStyler.

Quitting

Complete these steps if you have completed your work with the PC and DCS 200 Camera.

1. (Optional) Choose KODAK DCS 200 again from the IMPORT submenu to return to the image window; delete unwanted images. This action will make room on the DCS 200 Camera hard disk, or external hard disk, for additional images.
2. Save images as desired.
3. Choose EXIT from the FILE menu to quit PhotoStyler.
4. Turn off the DCS 200 Camera by sliding the power switch to off.

   NOTE: Ignore this step if you are working with an external hard disk that has been used with the DCS 200 Camera.
5. Choose EXIT WINDOWS from the Windows FILE menu.
6. Turn off your PC.
7. (Optional) Disconnect the DCS 200 Camera from the computer.

   NOTE: If you are working with an external hard disk that has been used with the DCS 200 Camera, ignore this step; you can now remove that external hard disk, and reuse it with the DCS 200 Camera.

Additional Features of the Kodak Driver for Aldus PhotoStyler Software

The driver supplied by Kodak for use with Aldus PhotoStyler software provides a variety of additional features that allow you to work with images on the DCS 200 Camera hard disk, on an external hard disk, and on the PC hard disk. The driver allows you to return from a photographic shoot, rapidly view some or all of the images, and transfer selected images to the PC hard disk for archival purposes or for later retrieval into PhotoStyler. You can then delete some or all of the images on the camera hard disk or external hard disk in preparation for making additional images.

(Refer to "Reference — Kodak Driver for Aldus PhotoStyler Software" — Chapter 8 — for a detailed description of these features.)

Taking Pictures While Connected to the Computer

You can take pictures with the camera while it is connected to the computer (for example in a studio setting). The following considerations apply to this usage.

- The camera functions independently, so it is not necessary for the computer to be running the software driver while taking pictures. The camera will continue to function while connected to the computer even if other software is active or if the computer is off.
- The AC battery charger/adapter can be used with the camera. We recommend this configuration.
- If you use the camera while the software driver is running on the computer, images will appear one-after-another in the image window as you take pictures.
- If no hard disk is present in the camera, or if you have turned off the DISK SAVE ON option on the Control Panel, each new image replaces the previous one. If you have an image you want to save, be certain that you acquire it or save it to an archive file (refer to information throughout Chapter 8, "Reference — Kodak Driver for Aldus PhotoStyler Software") before taking another picture.
- Do not take new pictures while an image is being acquired.
- Do not connect the camera to your computer while an optional external hard disk is connected to the camera. Instead remove the hard disk from the camera, and connect either the camera or the hard disk to the computer.
- The DELETE button on the camera back is disabled while the camera is connected to a computer. Instead use the DELETE button on the image window of the software driver to delete images.
- The TAKE PICTURE button on the software driver can be clicked to issue a command that directs the camera to take a picture.

6

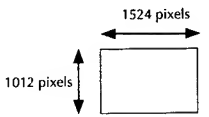
Reference — DCS 200 Camera

This section of the manual explains and describes the:

- KODAK camera back and Imager.
- Camera back LCD and SCSI connector.
- DCS 200 Camera operating configurations.
- Camera back internal hard disk.
- Batteries and AC battery charger/adapter used by the DCS 200 Camera.
- On/off state of the camera back.
- Timing considerations.
- Troubleshooting the DCS 200 Camera.
- Changing batteries and cleaning a dirty imager.

KODAK Camera Back and Imager

The KODAK camera back incorporates a 1524 x 1012-pixel charge coupled device (CCD) full-frame imager that collects light on 1,542,288 pixels, each 9 x 9-micrometers in size. There are two versions of the imager, one in the color camera back and another in the monochrome camera back. The CCD imager is 14.0 mm x 9.3 mm, smaller than the image area of 35 mm film. This produces a field of view equal to using a lens with 2.6 times the focal length of the lens in use, as illustrated in the table of lenses in "Using the Nikon N8008s Camera" on page 3-37.



Just after you take a picture the Nikon camera transmits the ISO, aperture, and shutter speed to the KODAK camera back. After the shutter closes, the camera back uses this information to process the image data.

When you take a picture, light passes through the lens onto the imager; each pixel receives and stores a specified amount of light. These data — for one image — leave the imager chip in analog form, and are converted to digital form and stored with other data in the 2 megabytes (MB) of dynamic random access memory (DRAM).

Once the data are in the single-frame DRAM, the hard disk — if present — is started if it is not already running, and data from the image are transferred to the hard disk. Hardware in the camera back generates a thumbnail from the image data. The thumbnail is a subsample of image data, with data sampled from every eighth pixel. The thumbnail is subsequently stored with the full image on the hard disk (if present).

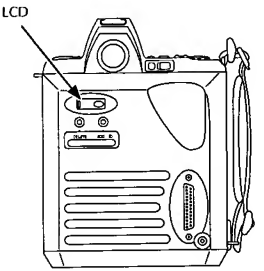
You can use one of the supplied software drivers on your computer to update firmware (non-volatile memory) in the camera back that controls how the camera works. This is a key feature since this design means it is possible for you to update camera firmware yourself instead of returning the camera for firmware updates.

A self-test of camera performance is available to you through the Control Panel of the software drivers. This can be helpful for field debugging before you call Kodak. (Refer to "Do Self Test" on page 7-18 for the Macintosh computer and page 8-16 for the PC.)

Liquid Crystal Display (LCD)

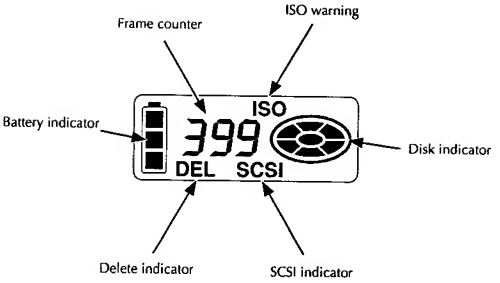
A liquid crystal display (LCD) on the KODAK camera back provides status information for the KODAK Professional DCS 200 Digital Camera (DCS 200 Camera).

KODAK CAMERA BACK



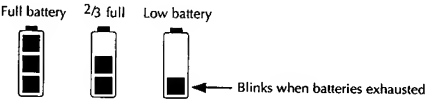
LCD CAMERA-OFF GRAPHICS

LCD FULL GRAPHICS



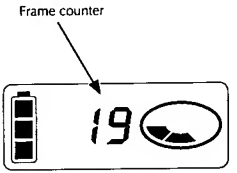
Battery Indicator

When the DCS 200 Camera is awake, the battery indicator displays the amount of battery life — full, 2/3 full, and 1/3 remaining — in the batteries in the camera back (not in the camera). When battery life is exhausted, the bottom indicator blinks. (Refer to "Batteries" on page 6-25 for information on battery life.)



Frame Counter

The frame counter displays the number of the picture most recently taken. The counter shows 0 (zero) when the disk is empty, and then 1 after the first picture is taken, 2 after the second picture is taken, and so on.



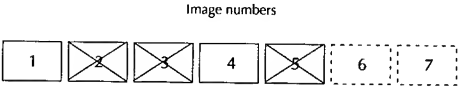
The number of images that can be stored on a hard disk depends on the size of the hard disk. An 80 megabyte (MB) hard disk (internal or external) can hold 50 images. A 40 MB external hard disk can store 22 images.

Image Numbering System

The image number displayed in the frame counter may be higher than the maximum number of images that can be stored on the hard disk, since images retain their numbers when images with lower numbers are deleted.

When you delete images (with the DELETE button on the camera back or with a software driver), existing images on the hard disk are not renumbered. Consider the figure below. Suppose that you had an empty disk, took five pictures, and then deleted image 5 with the DELETE button and images 2 and 3 with the software driver. Image 4 is not renumbered.

As you take new pictures that are stored to the hard disk, they are given the next higher number that has not been previously used for an image. In the figure below, new images will be numbered 6, 7, ...



The highest frame number on a hard disk is 399. It is possible that you will reach this frame number by a continuous process of making images, deleting some, and then making additional images. If you do reach frame number 399, the next picture you take will be numbered 1, then 2, then 3, and so on, even if those numbers are already in use. You will also restart the numbering system at 1 if you recover the hard disk. (Refer to "Recover Disk" on page 7-20 for the Macintosh computer or page 8-18 for the PC.)

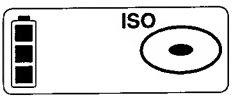
Therefore it is possible that you may have several images with the same image number. Duplicate image numbers do not cause any functional problems; however, you can avoid potential confusion by occasionally erasing or formatting the hard disk after copying all needed images to your computer hard disk. (Refer to page 7-19 for the Macintosh computer or page 8-17 for the PC.) When the entire hard disk is erased or formatted, the next picture taken is numbered 1.

If neither an internal nor an external hard disk is available, images still receive sequential image numbers, as the frame counter is increased by one for each picture you take. However, it is important to realize that only the latest image is retained as each new image replaces the previous one in dynamic random access memory (DRAM). No images are being stored to disk since no hard disk is present.

ISO Warning

The word ISO appears as a warning on the LCD if you try to take a picture and the Nikon camera body is not set to one of the four prescribed ISO settings for your camera back. The camera may not shoot in this condition; if the ISO warning appears, select a prescribed ISO as described in "Setting the ISO and Other Camera Settings" on page 3-18.

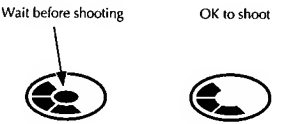
NOTE: The DCS 200 Camera provides images at exposure indexes equivalent to film speeds of ISO 50, 100, 200, and 400 in color or ISO 100, 200, 400, and 800 in black and white.



Disk Indicator

The disk indicator, shown in each of its stages below, appears when you wake the DCS 200 Camera. It indicates the amount of an available hard disk filled with images. When the entire disk indicator flashes, the hard disk is full. If both an internal and an external hard disk are present, the disk indicator displays the amount of room on the external hard disk.

The hard disk does not run continuously, since that would quickly drain the batteries; instead, the hard disk spins only when needed to read from or write to the hard disk. The camera will not allow you to take pictures during part of the time that the hard disk is active. You cannot take a picture while the center dot on the indicator appears; you must wait several seconds until the dot is off before you can take a picture.

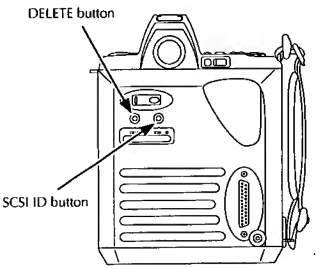


Disk Error Indicator

Two characters, an "E" followed by a single digit (for example "E1") — if they appear on the LCD — indicate that an error has occurred on the internal hard disk, on an external hard disk, or in DRAM. If this occurs, turn off the camera, turn it on, and retry the operation. If you continue to have problems, refer to the discussion of FORMAT DISK on page 7-19 for the Macintosh computer or on page 8-17 for the PC .

Control Buttons

Two control buttons — DELETE and SCSI ID — are provided on the KODAK camera back. Both are recessed in the housing and are operational when pressed with an object like a very blunt pencil or ball point pen. Do not use a sharp object; it can puncture the button and damage the switch.



DELETE Button and Delete Indicator

You use the DELETE button to delete the last image on the hard disk.

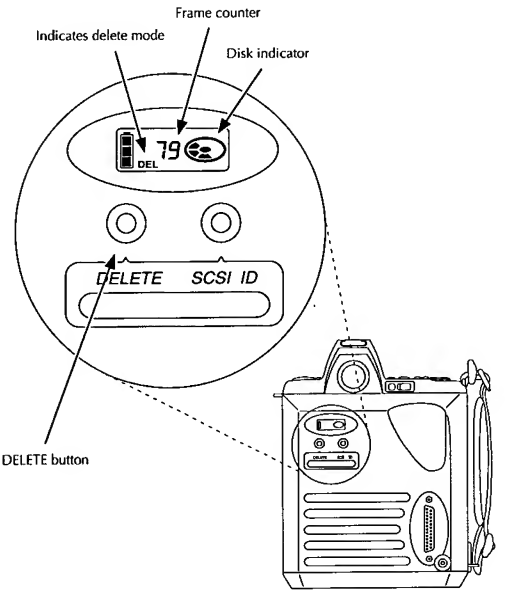
- If only an internal hard disk is installed (no external hard disk is present), the image is deleted from the internal hard disk.
- If an external hard disk is attached (and no internal hard disk is installed), the last image on the external hard disk is deleted.
- If both an internal and an external hard disk are present, images are deleted only from the end of the external hard disk; remove the external hard disk (after turning off the camera) to delete images from the internal hard disk.

IMPORTANT: If you inadvertently delete images, an emergency procedure provides an opportunity for you to recover images if you do so before making any additional images. Refer to the discussion of RECOVER DISK on page 7-20 for the Macintosh computer or on page 8-18 for the PC.

To use the DELETE button, first lightly press the shutter release button to wake the DCS 200 Camera. Then press DELETE once to wake delete mode. The characters "DEL" — the delete indicator — appear on the camera back LCD, and the LCD shows image number 0. Wait several seconds (while the hard disk begins to spin) until the image number of the last image on the hard disk replaces number 0 on the LCD. Then press DELETE again to delete that image.

As long as the characters "DEL" appear on the LCD, you can press the DELETE button again and again to delete additional images. With each

press you delete the image whose number appears in the LCD. Several seconds after you stop deleting images, delete mode turns off; reactivate it, if needed, by waking the camera and pressing the DELETE button again.



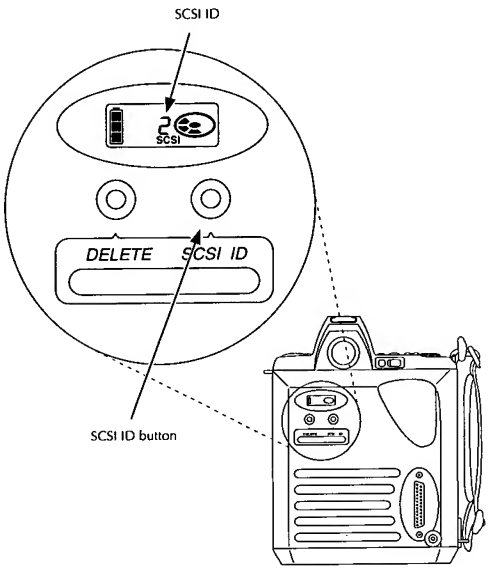
The DELETE button is for emergencies, not for routine operation. As an example of its use, suppose you are beginning to shoot and realize that the hard disk is full. The DELETE button provides an on-site method of deleting images so that you can continue to use the camera. Or perhaps you know that you need to conserve hard disk space and you realize that a picture you have just taken is not satisfactory. You can use the DELETE button to delete that image.

The DELETE button deletes only one image at a time, and only the last image on the hard disk. That is, if you have 20 images on the hard disk, you cannot delete the fifteenth image and leave the others. However, you can delete the fifteenth image with one of the supplied software drivers when connected to a computer. In addition you can use the software drivers to delete multiple selected images simultaneously, or to erase or format the entire hard disk.

NOTE: The DELETE button does not function when the camera is connected to a computer; use the DELETE button on the software driver to delete images in this configuration.

SCSI ID Button and SCSI Indicator

You use the SCSI ID button to set the DCS 200 Camera SCSI ID. The setting is important when the DCS 200 Camera is connected to your computer.



To set the SCSI ID, first lightly press the shutter release button to wake the DCS 200 Camera. Then, press the SCSI ID button once to wake SCSI mode. The characters "SCSI" — the SCSI indicator — appear on the camera back LCD as does the current SCSI ID value, a single digit from 0 to 7.

As long as the characters "SCSI" appear on the LCD, you can press the SCSI ID button again and again to rotate through the available values. Stop when you have selected the SCSI ID you want. Several seconds after you press the SCSI ID button for the last time, SCSI mode turns off; reactivate it — if needed — by waking the camera and pressing the SCSI ID button again.

If you are using a monochrome camera, in addition to the digits from 0 to 7, the characters "CF" appear in rotation as one of the SCSI ID choices. Use the CF choice, which stands for color filter mode, when using the monochrome camera with the optional KODAK Color Filter Wheel Accessory. (A separate instruction manual accompanies that accessory, which can only be used with a Macintosh computer.)

Select the appropriate SCSI ID before you connect the DCS 200 Camera to your computer. Select an ID that is different from the SCSI ID of any other connected SCSI devices.

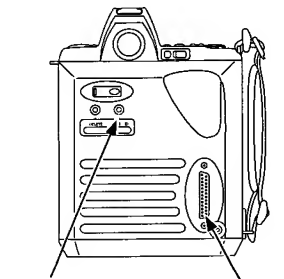
NOTES: The use of this feature is described in Chapter 4 "Using the DCS 200 Camera with a Macintosh Computer" and in Chapter 5 "Using the DCS 200 Camera with a PC."

There are SCSI settings on the KODAK camera back and on external hard disks; however, these two SCSI ID values do not need to match when an external hard disk is connected to the camera.

SCSI Connector (KODAK Camera Back)

A single 25-pin, female, subminiature D, SCSI connector appears on the KODAK camera back.

You connect the KODAK Professional DCS 200 Digital Camera to your computer from this connector with one of the supplied SCSI cables. Once you connect it you can operate the camera system and the computer simultaneously. Detailed directions for making this connection, and for using the camera in this state, with or without an internal hard disk, appear in Chapter 4 "Using the DCS 200 Camera with a Macintosh Computer" and in Chapter 5 "Using the DCS 200 Camera with a PC."



In addition, you can connect a single optional external hard disk to the DCS 200 Camera at this SCSI connector by following directions provided in the tabbed section "Using an external hard disk."

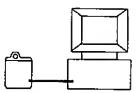
> **CAUTION:** For correct operation, the KODAK camera back and the Nikon N8008s camera must be connected to each other whenever the camera back is connected to the computer. Do not attach the camera back to the computer when the camera back is disconnected from the camera.
>
> Remove an external hard disk from the camera, if present, before connecting the DCS 200 Camera to the computer, or before connecting the external hard disk to the computer.

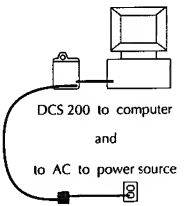
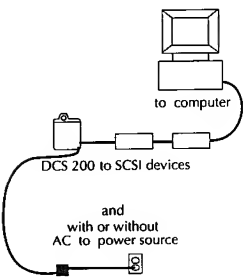
DCS 200 Camera Operating Configurations

You can take pictures with the DCS 200 Camera in the following equipment configurations. Additional information appears after the table.

NOTE: The tabbed section "Using an external hard disk" provides information on supported configurations when connecting an external hard disk to a Macintosh computer or PC.

Configuration	Description
 DCS 200	DCS 200 Camera alone, with or without an internal hard disk.
 DCS 200 + External hard disk	DCS 200 Camera, with or without an internal hard disk, with an optional external hard disk.
 DCS 200 to AC to power source	DCS 200 Camera, with or without an internal hard disk, connected to a source of power with the supplied AC battery charger/adapter.

Configuration	Description
 DCS 200 to AC to power source + SCSI extender + External hard disk	DCS 200 Camera, with or without an internal hard disk, connected to a source of power with the supplied AC battery charger/adapter, with an optional hard disk. This configuration may require a SCSI extender supplied with the external hard drive.
 DCS 200 to computer	DCS 200 Camera, with or without an internal hard disk, connected to a Macintosh computer or PC. The computer can be on or off, and can be running Adobe Photoshop (Macintosh computer) or Aldus PhotoStyler (PC), or another application. Although this configuration is supported, we recommend you always use the AC battery charger/adapter when the camera is connected to a computer. **IMPORTANT:** Refer to "Making the SCSI Connection" for the Macintosh computer (page 4-9) or PC (page 5-10) for specific cabling and termination details.

Configuration	Description
	DCS 200 Camera, with or without an internal hard disk, connected to a source of power with the supplied AC battery charger/adapter, and connected to a Macintosh computer or PC. The computer can be on or off, and can be running Adobe Photoshop (Macintosh computer) or Aldus PhotoStyler (PC), or another application. **IMPORTANT:** Refer to "Making the SCSI Connection" for the Macintosh computer (page 4-9) or PC (page 5-10) for specific cabling and termination details.
	DCS 200 Camera, with or without an internal hard disk, with or without an AC battery charger/adapter, connected to a Macintosh computer or PC with other SCSI devices. Although we support this configuration without an AC battery charger/adapter, we recommend you always use the AC battery charger/adapter when the camera is connected to a computer. **IMPORTANT:** Refer to "Making the SCSI Connection" for the Macintosh computer (page 4-9) or PC (page 5-10).

Using the Camera with an Internal Hard Disk

With an internal hard disk installed in the KODAK camera back, the unit is portable, and can be used in the large variety of stand-alone shooting situations in which the Nikon N8008s can be used.

Images are stored on the internal hard disk as you take them. The camera will not operate once the internal hard disk is full. When full, you will need to do one or more of the following.

- Use the DELETE button to delete the most recently made image(s) from the hard disk.

  NOTE: The DELETE button does not function when the camera is connected to a computer; use the DELETE button on the software driver to delete images in this configuration.

- Attach the DCS 200 Camera to the computer, and use a supplied software driver to delete images from the hard disk (after acquiring them from the camera back if desired).
- Attach an external hard disk that has room for additional images.

Using the Camera with an External Hard Disk

You can connect a single, pocket-size, external hard disk to the camera back at the SCSI connector. An external hard disk can be used on a DCS 200 Camera with or without an internal hard disk. You can purchase multiple external hard disks, fill one with images, disconnect it from the DCS 200 Camera, and replace it with another for continued shooting.

You can remove the external hard disk from the DCS 200 Camera and after setting the SCSI ID on an external hard disk, connect it to the SCSI port on your computer (refer to the tabbed section "Using an external hard disk"). Once the hard disk is connected to your computer, use one of

the supplied software drivers to access images — to move or copy them to your computer hard disk, to delete them from the external hard disk, and/or to acquire them in image editing software.

IMPORTANT: When you are ready to acquire images on your computer from the external hard disk, you must disconnect the hard disk from the DCS 200 before connecting it to the computer. Never connect the DCS 200 Camera to a computer while an external hard disk is connected to the DCS 200 Camera.

If the camera is used with both an internal and an external hard disk, images are saved first on the external hard disk until it is full or removed. Once removed, images are then saved to the internal hard disk. If the external hard disk is full it must be removed before images will be saved to the internal hard disk.

If there is only an external hard disk (no internal hard disk), images are saved on that hard disk until it is full.

If an internal hard disk is installed and an external hard disk is attached, the DELETE button deletes images only from an external hard disk. You must remove the external hard disk before the DELETE button will delete images from the internal hard disk.

Using the Camera with No Hard Disk

You can use the camera in stand-alone mode without an internal or external hard disk, and without connecting the camera to a computer. In this mode the you can take a single picture which is saved in the single-frame, dynamic random access memory (DRAM). If an additional picture is taken, it replaces the image in memory — the first image is lost. The

image will be retained for up to several hours (even if the KODAK camera back is removed from the camera body). The camera back will remain on for several hours. It will turn off earlier if the image is deleted by pressing the DELETE button on the camera back or by using the software driver, or if the batteries are removed from the camera back.

NOTE: DCS 200 Camera models without a hard disk are intended for use in situations where the camera is connected to a computer. In that configuration, each image you take is automatically available for uploading to the computer. (In addition, you can disconnect the camera from the computer, take the camera to another location — perhaps the next room — take one picture, and return and move that image to the computer.)

Using the Camera Connected to a Computer

You can use the DCS 200 Camera while it is connected directly to a computer, for example in a studio setting. Connections between the two devices are made with the supplied SCSI cable, as described in Chapter 4 "Using the DCS 200 Camera with a Macintosh Computer" and Chapter 5 "Using the DCS 200 Camera with a PC."

In this mode, the camera can be operated with or without an internal hard disk; however, do not operate it in this mode with an external hard disk connected. While connected to a computer, the supplied software drivers allow you to control whether images are saved to the hard disk or not. If you choose not to save images, the images are still automatically and instantly available via the driver for moving to the computer. They are displayed in the driver window as soon as they are made, allowing you to determine quickly if the current image is acceptable or not.

Internal Hard Disk

Two models of the DCS 200 Camera — one with color and one with black and white — are available with 80 megabyte (MB) internal hard disks. Up to 50 images can be saved on the 80 MB internal hard disk.

The hard disk has a brief spin-up period of several seconds. Since images are stored in dynamic random access memory (DRAM) before they are moved to the hard disk, you can begin to take pictures almost immediately after turning on the DCS 200 Camera.

Even though the KODAK Professional DCS 200 Digital Camera is on, the hard disk is not continuously on.

- If you are operating from batteries only, the hard disk turns off when the Nikon N8008s sleeps after approximately 10 seconds of inactivity.
- If you are running from the AC battery charger/adapter and the camera is connected to a computer, the disk will run for thirty seconds after the last disk activity.

NOTE: You cannot modify an image in image editing software and then save it to the DCS 200 Camera hard disk, nor can you use that hard disk as a storage device for other computer applications.

Batteries

KODAK Camera Back

The KODAK camera back uses six standard, AA-type, minimum 600 mAh, NiCad rechargeable batteries. With batteries installed in the camera and in the camera back, you can also operate from the supplied AC battery charger/adapter as described in "AC Battery Charger/Adapter" on page 6-29.

The batteries are placed in a battery holder in the bottom of the camera back; the holder is held in place with a one-quarter turn of the screw on the battery holder door on the bottom of the camera back. Directions for changing the batteries appear in "Changing Batteries in the KODAK Camera Back" on page 6-48.

You can take between one hundred and two hundred pictures from a charged set of batteries. The lower number will be obtained if you take the pictures one-by-one with the disk drive stopping after each picture is taken, while the higher number will be obtained if pictures are taken in small "bursts" while the drive is active.

The batteries in the camera back provide power only to the camera back, and not to the camera.

Characteristics of Nickel Cadmium Batteries

Modern nickel cadmium (NiCad) batteries exhibit an effect called voltage depression, which is commonly called "memory." However, voltage depression is different from memory; memory is the term used to describe a rare problem that occurred only with early nickel cadmium batteries, in which the cells remembered the amount of discharge they had undergone and could not hold more charge. The effect was permanent. Voltage depression does not have the same characteristics as memory problems.

Voltage depression is a temporary effect that occurs when the cell is repeatedly (50-100 cycles), discharged by only 10-20% of capacity and then recharged. (One cycle consists of discharging then charging the cell, irrespective of the amount of discharge/charge.) When voltage depression occurs, it causes the cell voltage to drop sooner than expected near the end of a full discharge, effectively reducing the available capacity by 5-10%. The effect is not cumulative; it does not worsen with added cycles and does not eventually reduce the capacity of the cell to nothing.

Voltage depression is unlikely to occur with the DCS 200 since the camera uses batteries heavily; it is therefore unlikely that you will have a large number of cycles in which the battery is only discharged by up to 20%. Instead, a battery will typically be discharged by more than that amount. Even if you do use the camera with repeated low discharge rates, the only time you may see this effect is when you fully discharge the batteries.

If the voltage drops sooner than expected near the end of a full discharge, you can completely eliminate this rare, temporary problem by two full discharge and charge cycles; the first discharge exhibits most of the voltage depression.

Nickel cadmium battery capacity decreases slowly with charge/discharge cycles. Deeper discharge reduces capacity more per cycle than partial discharge. For example, the CADNICA cells supplied with the DCS 200 will provide 2,000-3,000 cycles if discharged 50%, but only 500-1,000 cycles if fully discharged with each cycle. For this reason, do not deliberately discharge the batteries fully every time they are used. For the same reason, do not use a battery discharger; regular use will only decrease the life of the batteries.

An unrelated problem, cell reversal, can occur when the batteries are never fully charged. When cells are partially discharged and partially recharged repeatedly, the weakest cell can reach 0 volts when discharged, and the other cells will actually charge the weak cell. This problem is usually reversible by fully charging the battery pack, but the condition shortens the life of the reversed cell.

With all of these considerations in mind:

- Fully charge the batteries whenever you use the camera.
- Do not use a battery discharger.
- If you think you are having voltage depression problems, leave the camera on until the batteries are dead, and then charge them fully. Repeat the process. The camera will be ready to use. (Do not take pictures as the batteries die.)

WARNING: In an emergency you can use six matching non-rechargeable alkaline batteries in the KODAK camera back, although their life will be shorter (30-40 images) than charged NiCad batteries. However, you must *not* attempt to recharge alkaline batteries. Do *not* use the AC battery charger/adapter while alkaline batteries are in the camera back. Recharging alkaline batteries or using them in the camera back when the AC battery charger/adapter is in use can result in battery leakage or explosion. **Damage resulting from this misuse will not be covered by the warranty and will void the warranty.**

Read and follow all directions and cautions regarding batteries in "Important Safeguards and Precautions" on page x.

Nikon N8008s Camera

The Nikon N8008s camera uses four AA-type, alkaline batteries. Additional information about batteries appears in "Extra Batteries" on page 1-11, and directions for replacing these batteries appear in "Changing Batteries in the Nikon N8008s Camera" on page 6-51. Do not recharge these batteries. Do not use these batteries in the KODAK camera back.

The batteries in the camera provide power only to the camera, and not to the camera back. Even with the camera on, the batteries in the camera will provide hundreds of hours of use.

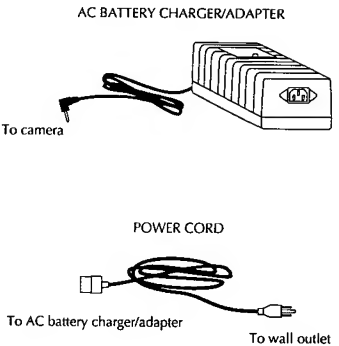
NOTES: You can also operate the Nikon N8008s with four AA-type NiCad batteries (instead of alkaline batteries), if the "+" terminal does not exceed 6 mm in diameter. Selecting NiCad batteries instead of alkaline batteries for the camera means you can stock the same NiCad batteries for both the KODAK camera back and the Nikon N8008s camera.

Read and follow all directions and cautions regarding batteries in "Important Safeguards and Precautions" on page x, and in the Nikon camera manual.

KODAK Professional DCS 200 External Battery Adapter

This optional accessory is a replacement for the nickel cadmium battery clip in the KODAK camera back. This accessory allows the camera to be used with the Quantum Battery 2 (QB2). Refer to "Optional Camera Equipment" on page 1-9 for additional information.

AC Battery Charger/Adapter



> **CAUTION:** Observe all cautions regarding this unit included in "AC Battery Charger/Adapter — Important Warnings" on page xvi.

You can use the supplied AC battery charger/adapter to operate the KODAK Professional DCS 200 Digital Camera and to charge batteries in the KODAK camera back. For either usage, batteries must be installed in

both the KODAK camera back, and in the Nikon N8008s camera. The AC battery charger/adapter charges only the batteries in the camera back and powers only the camera back. It does not power or charge batteries in the Nikon N8008s camera.

At least eight hours are required to provide a full charge to the batteries in the camera back. Batteries can be charged overnight while left in place in the camera. The AC battery charger/adapter will charge the batteries while the camera is in use; however, the camera must be off to bring the batteries to a fully charged state.

The AC battery charger/adapter will support continuous operation of the camera, important in studio settings, and other locations. However, if connected when weak or dead batteries are in place in the camera back, do not turn on the camera for at least five minutes; this will allow the batteries to obtain a charge that is sufficient to prevent a brief power loss should one occur.

The light on the top of the AC battery adapter/charger goes on when the system is ready for use. When using low or dead batteries, it may take a minute for the light to turn on while the batteries charge. A slight flicker in the light is not unusual; but if the light tends to stay off when operating the camera, stop taking pictures for a few minutes to allow the batteries to charge.

The AC battery charger/adapter should be used while the DCS 200 is connected to a computer, and for indoor usage where power is available for the AC battery charger/adapter. Additional directions for using the AC battery charger/adapter appear in "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3.

Turning On/Off the KODAK Camera Back

There is no separate on/off switch for the KODAK camera back. Instead, when you turn on and then wake the Nikon camera, the camera back turns on. It is then possible for the Nikon camera to remain on while the camera back turns off, or for the camera back to remain on when you turn off the camera.

Additionally, suppose that you are operating the DCS 200 camera while connected to the AC battery charger/adapter and to the computer. All equipment is off. In this situation you should turn on and wake the camera before you turn on the computer. (If you do not turn on the camera first, the camera back may turn on when you turn on the computer, with uncertain results.)

The on/off state of the KODAK camera back depends on the mode of camera operation as follows.

Mode of Camera Operation	On/Off State of the KODAK Camera Back
A DCS 200 camera with a hard disk is operated in stand-alone mode (not connected to a computer) with or without the AC battery charger/adapter.	When the Nikon camera sleeps, the camera back turns off. Or, if you turn off the camera, the camera back will turn off. However, if the camera back is in the process of saving an image to the hard disk, the camera back will remain on by itself for several seconds until the image is saved, and then will turn off.

Mode of Camera Operation	On/Off State of the KODAK Camera Back
A DCS 200 camera without a hard disk is operated in stand-alone mode (not connected to a computer) without the AC battery charger/adapter.	When you turn off the Nikon camera, if an image is in DRAM, the camera back will remain on until its batteries are nearly exhausted. This provides time for you to take the camera with its single image (in dynamic random access memory) to a computer for uploading. Press the Delete button on the camera back to delete the image and turn off the camera back.
A DCS 200 camera without a hard disk is operated in stand-alone mode (not connected to a computer) with the AC battery charger/adapter.	When you turn off the Nikon camera, if an image is in DRAM, the camera back will remain on indefinitely. Press the Delete button on the camera back to delete the image and turn off the camera back.

Mode of Camera Operation	On/Off State of the KODAK Camera Back
A DCS 200 camera with or without a hard disk is operated from batteries while connected to a computer.	If the software driver window is opened (whether the Nikon camera is turned off or not), the camera back remains on, and will only turn off if the batteries are almost exhausted. If the driver window is closed, the camera back will turn off in approximately 30 seconds, unless there is an image in DRAM in a camera without a hard disk. **NOTE:** If the batteries have been fully charged, it is possible that the camera back will remain on when the driver window is closed.
A DCS 200 camera with or without a hard disk is operated from the AC battery charger/adapter while connected to a computer.	The camera back remains on, whether the Nikon camera is turned off or not, and whether or not the software driver window — or application — is opened.

Timing Considerations

When you take a picture, it is first stored in the single-image, dynamic random access memory (DRAM); with a hard disk installed, the hard disk must spin-up and then the image will be moved from DRAM onto the hard disk.

The DCS 200 Camera is ready to take the first picture approximately one second after you turn on the camera body and lightly press the shutter release button to wake the camera.

Once the first picture is taken, hard disk spin-up requires approximately four seconds, and an additional two seconds are needed to move image data from DRAM to the hard disk — a total of six seconds for the first image. Subsequent images require only 3.5 seconds to capture and write to disk, meaning that the maximum image capture rate is one image every 3.5 seconds. The hard disk continues to spin for eight seconds before it turns off after the "last" picture is taken; it must spin-up again when the "next" picture is taken after it has timed-out.

The table on the next page provides approximate timing considerations for displaying and acquiring images with the DCS 200 Camera when connected to a Macintosh Quadra 900 computer with 32 megabytes of random access memory running Adobe Photoshop 2.5 with the Kodak Driver for Adobe Photoshop Software (for the driver dated 06/29/93 on the diskette).

Action	Color Camera	Monochrome Camera	Monochrome Camera with KODAK Color Filter Wheel Accessory
Draw one monochrome thumbnail. **NOTE:** For a full screen of thumbnails, assuming the system described above, multiply this value by the number of thumbnails displayed on your monitor.	0.16 seconds	0.16 seconds	1.27 seconds
Draw one color thumbnail. **NOTE:** For a full screen of thumbnails, assuming the system described above, multiply this value by the number of thumbnails displayed on your monitor.	0.80 seconds	—	1.27 seconds
Display a preview image.	4.7 seconds	2.4 seconds	20.1 seconds
Acquire an image into Adobe Photoshop	39.2 seconds	7.6 seconds	47.1 seconds

Troubleshooting the DCS 200 Camera

IMPORTANT: Most problems are caused by exhausted batteries. The DCS 200 operates on two sets of batteries, one set in the Nikon camera, and another in the KODAK camera back. These batteries operate separately — the camera batteries do not power the camera back, and the camera back batteries do not power the camera. The AC battery charger/adapter provides power to and charges only the rechargeable camera back batteries; it has no effect on the batteries in the camera. Both sets of batteries must be in place and must have power for the camera system to operate.

Trouble	Possible Cause	Suggested Solution
No power when using batteries.	The Nikon camera is not on.	Slide the Nikon camera power switch to on.
	The batteries in either the camera or the camera back (there are two sets of batteries) are discharged.	If the camera wakes, but the camera back does not, charge batteries in the camera back with the AC battery charger/adapter, or operate from the AC battery charger/adapter, or replace batteries in the camera back. If the camera does not wake, replace batteries in camera.
	There are batteries in the camera but not in the camera back, or the reverse. Or batteries are not installed properly.	Install batteries properly.
	The batteries are old.	NiCad batteries have a finite life. Replace if they do not hold a charge.

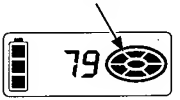
continued

Trouble	Possible Cause	Suggested Solution
continued from previous page No power when using batteries.	Batteries have been discharged/recharged partially without full charge, causing a cell to be charged by others (cell reversal).	Fully charge the batteries.
No power to operate the camera when using the AC battery charger/adapter.	The Nikon camera is not on.	Slide the Nikon camera power switch to on.
	The cable from the AC battery charger/adapter to the camera back is loose or not plugged into the camera back.	Make sure the cable is connected to the camera back and seated securely.
	The AC battery charger/adapter cable is loose or not plugged in at the wall.	Make sure the cable is connected to the wall and seated securely.
	The line voltage has not been set properly on the bottom of the AC battery charger/adapter.	Set the line voltage properly. (Refer to "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3.)
	There is no power at the power source.	Have the power source repaired and/or try another power source.
	The AC battery charger/adapter power cable is faulty.	Replace the cable.
	The AC battery charger/adapter is faulty.	Contact Kodak.

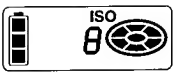
Trouble	Possible Cause	Suggested Solution
The red light on the AC battery charger/adapter does not come on within one minute when charging batteries in the camera back.	Refer to all items on the previous entry, except that the Nikon camera does not need to be on to charge batteries in the KODAK Camera Back.	Refer to all items on the previous entry.
The LCD panel on the Nikon camera blinks when you press the shutter release button to wake the camera.	The batteries in the Nikon camera are discharged or improperly installed.	Replace, or properly install, the batteries.
With the camera on, shutter speed and aperture data do not appear in the LCD panel when you press the shutter release button, or those data turn off immediately after you remove your finger from the button.	The batteries in the Nikon camera are discharged or improperly installed.	Replace, or properly install, the batteries.
The camera wakes but when the shutter release button is pressed the camera back does not wake, although the camera continues to take pictures.	The batteries in the camera back are dead.	Charge the batteries in the camera back with the AC battery charger/adapter, or operate from the AC battery charger/adapter, or replace the batteries in the camera back with charged batteries.
There is an unexpected whirring noise when you press the shutter release button to wake the camera.	The Nikon N8008s camera is checking to determine if film is loaded.	The noise is normal when the camera is used as part of the DCS 200 Camera.

Trouble	Possible Cause	Suggested Solution
There are unexpected delays when reading from or writing to an internal hard disk.	The batteries are cold.	Warm the batteries to room temperature.
	Condensation may be present in the camera.	Condensation may be present if the camera is moved from a relatively cold environment (like an air conditioned hotel room), into a warm, humid environment. We recommend that you allow sufficient time for the camera to normalize within the specified environmental ranges before operation.
You are taking pictures while connected to a computer, but the images are not being stored to the camera back hard disk.	Disk Save is set to Off on the Control Panel in the software driver.	Change the Disk Save control from Off to On.
Pressing the camera shutter release button does not release the shutter.	The Nikon N8008s camera is in a programmed auto exposure mode and the lens is not at the minimum aperture.	Change to another exposure mode, or stop down to the minimum aperture.
	The Nikon N8008s camera is in single servo autofocus mode (S) and is unable to focus.	Change to another focus mode, or re-aim the camera, or remove the lens cap.

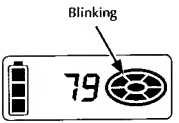
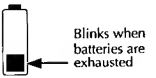
continued

Trouble	Possible Cause	Suggested Solution
continued from previous page Pressing the camera shutter release button does not release the shutter.	The camera is off.	Turn on the camera.
	The hard disk in the camera back is full. Blinking  	Delete images from the hard disk in the camera back.
		If connected to a computer, delete images or erase the hard disk with the software driver.
		Attach an external hard disk with space available.
	Both an external and internal hard disk are present and the external hard disk is full.	Remove the external hard disk to allow images to be saved on the internal hard disk, or replace the full external hard disk with an external hard disk that has room for images.
	The camera ISO is not set to one of the prescribed camera settings.	Change the camera ISO. Select an ISO of 50, 100, 200, or 400 for a color camera back, or an ISO of 100, 200, 400, or 800 for a monochrome camera back. *continued*

Trouble	Possible Cause	Suggested Solution
continued from previous page Pressing the camera shutter release button does not release the shutter.	You cannot take a picture while the center dot on the disk indicator is on. (The camera will not allow you to take pictures during part of the time that the hard disk is active.) Wait before shooting 	Wait several seconds until the center dot is off. OK to shoot 
	The batteries are low in the camera back.  Blinks when batteries exhausted	Recharge or replace the batteries.  Full battery
	If the characters "SCSI" appear on the camera back liquid crystal display (LCD) when you power up, the firmware in the camera has become corrupted.  2 SCSI	Update the camera firmware, as described on page 7-16 for the Macintosh computer or on page 8-15 for the PC .

Trouble	Possible Cause	Suggested Solution
The characters "ISO" appear on the camera back LCD. 	The camera ISO is not set to one of the prescribed camera settings.	Change the camera ISO. Select an ISO of 50, 100, 200, or 400 for a color camera back, or an ISO of 100, 200, 400, or 800 for a monochrome camera back.
Two characters, an "E" followed by a single digit (for example "E1"), appear on the camera back LCD. 	An error occurred on the internal hard disk, on an external hard disk, or in DRAM.	E1 indicates an internal memory error; contact Kodak for help. E2 indicates the failure of the disk to start, E3 indicates a failure when attempting to read the disk, and E4 indicates a failure when attempting to write to the disk. For any of these conditions, turn off the camera, turn it on, and retry the operation. If you continue to have problems, reformat the camera hard disk or external hard disk with the Format Disk button on the Control Panel of the software driver. (This will erase all existing images from the hard disk.) If the problem persists, contact Kodak; report the number of the error condition.

Trouble	Possible Cause	Suggested Solution
You are losing images from the camera hard disk.	An error occurred on the internal hard disk.	Turn off the camera, turn it on, and retry the operation. If you continue to have problems, reformat the camera hard disk with the Format Disk button on the Control Panel of the software driver. (This will erase all existing images from the hard disk.) If the problem persists, contact Kodak.
Image data on the hard disk have become corrupted.	You may be using an improper SCSI cable.	Use only the supplied SCSI cables to attach the camera or other peripherals to the computer.
The characters "SCSI" appear on the camera back LCD when you power up, and you are unable to use the camera.	The firmware in the camera has become corrupted.	Update firmware, as described on page 7-16 for the Macintosh computer or on page 8-15 for the PC.

Trouble	Possible Cause	Suggested Solution
The disk indicator is suddenly full, but you have not made enough images to fill the disk.  	You have recovered the hard disk by clicking the Recover Disk button on the Control Panel. Every image location on the hard disk is examined and recovered; empty areas at the end of the hard disk are recovered as blank images. A recovery will prevent you from taking additional pictures since a full set of images will be recovered.	Save needed images to the hard disk on your computer, and then delete unneeded images.
	An error occurred on the internal hard disk, and the firmware did an automatic recovery.	Connect the DCS 200 to your computer, run the driver, remove images you want to save to your computer (acquire, copy, or move images), and erase the hard disk (using the Erase Disk choice on the Control Panel).
The DCS 200 acts erratically, unusual or unexpected characters appear on the camera back LCD, or the LCD flickers unexpectedly.	The batteries in the camera back are low or dead.  	Recharge or replace the batteries in the camera back. *continued*

Trouble	Possible Cause	Suggested Solution
continued from previous page The DCS 200 acts erratically, unusual or unexpected characters appear on the camera back LCD, or the LCD flickers unexpectedly.	You are using rechargeable nickel cadmium batteries that are less than 600mAh.	Use only the recommended batteries. Refer to "Extra Batteries" on page 1-11.
	The firmware in the camera has become corrupted.	Update camera firmware, as described on page 7-16 for the Macintosh computer or on page 8-15 for the PC.
	The internal clock battery (a permanently installed separate battery in the camera back) is low.	Leave good batteries in the camera back for several days to charge the internal battery.
You are experiencing erratic camera behavior or unusual characters appear on the camera back LCD. You know the batteries are charged. You have tried to update camera firmware but are unable to do so — perhaps the camera does not respond to the computer software driver.	The firmware in the camera has become corrupted.	Update camera firmware, as described on page 7-16 for the Macintosh computer or on page 8-15 for the PC.
	You have attached more than one optional external hard disk to the camera.	Remove one of the external hard disks. Only one at a time should be attached to the camera.

Trouble	Possible Cause	Suggested Solution
The camera back remains on even though you have turned off the camera and it is not connected to the computer or the AC battery charger/adapter.	You are working with a camera that does not have an internal or external hard disk.	The latest picture taken with a camera without a hard disk is retained. In normal operation the camera back will stay on for several hours, or until the image is deleted, or until the batteries are removed from the camera back.
The camera is stuck in one mode for unknown reasons.	An unexplained event may have occurred.	Remove the battery holder from the camera. Reinstall the battery holder and try again. If this action does not clear the camera, update the camera firmware, as described on page 7-16 for the Macintosh computer or on page 8-15 for the PC.
The frame numbers on the camera back LCD have restarted at 1, but you have other images on the hard drive.	The highest frame number on a hard disk is 399. You may reach this number by a process of making images, deleting some, and making additional images. If you reach this number, the next image will be numbered 1, then 2, and so on. You will also restart the numbering at 1 if you recover the hard disk.	It is possible to have several images with the same image number. Duplicate image numbers do not cause any functional problems; however, you can avoid potential confusion by occasionally erasing the hard disk after copying all needed images to your computer hard disk. When the entire hard disk is erased, the next picture taken is numbered 1.

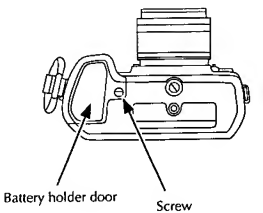
Trouble	Possible Cause	Suggested Solution
The area around the battery chamber is warm or hot when the camera has been connected to the AC battery charger/adapter for an extended period of time, or the middle of the camera back is warm when using the camera for an extended period.	A warm temperature is normal during the conditions described; however, if the battery area is hot during charging, you may have a bad battery.	For warm temperatures, continue to operate the camera normally. For a hot battery chamber, discontinue charging and replace all rechargeable batteries.

Maintenance

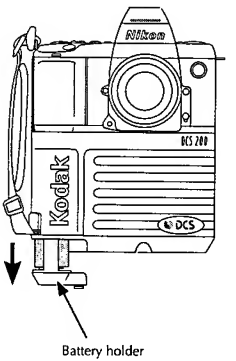
Changing Batteries in the KODAK Camera Back

In most situations we recommend that you recharge the batteries in the KODAK camera back by using the included AC battery charger/adapter while the batteries are in the camera back, as described in "Charging Batteries and Using the AC Battery Charger/Adapter," on page 3-3. However, there may be circumstances, for example use of the DCS 200 Camera in the field, in which you must change the batteries in the camera back. In those situations, follow the steps below to change batteries in the camera back.

1. Turn off the DCS 200 Camera.
2. If the AC battery charger/adapter is connected, disconnect it from the camera back.
3. Lay the DCS 200 Camera on its back on a flat, steady surface, with the bottom facing you.
4. Release the screw on the battery holder door with a coin by giving it a slight one-quarter turn in the counterclockwise direction until the slit in the screw is horizontal.



5. Gently pull out the battery holder.



6. Remove all six batteries; save them for later recharging.

> **WARNING:** If you have been using alkaline batteries in the camera back on an emergency basis, do not attempt to recharge those alkaline batteries. Do *not* use the AC battery charger/adapter while alkaline batteries are in the camera back. Recharging alkaline batteries or using them in the camera back when the AC battery charger/adapter is in use can result in battery leakage or explosion. **Damage resulting from this misuse will not be covered by the warranty and will void the warranty.**
>
> Instead, after removing them from the camera back, use them in other equipment requiring alkaline batteries (they have about half of their life remaining) or safely dispose of them.
>
> For rechargeable batteries, a separate charger can be used (refer to "Battery Charger" on page 1-13 for recommended chargers), or you can charge the rechargeable batteries at a later time by reinstalling them in the camera and using the supplied AC battery charger/adapter as described in "Charging Batteries and Using the AC Battery Charger/Adapter" on page 3-3.

7. Insert six charged, AA-type, NiCad batteries in the battery holder; use care to ensure that the batteries are inserted in the right direction (the battery holder is clearly marked), and seated properly.

> **CAUTION:** Use only the recommended batteries. (Refer to page 1-11.)
>
> Refer to all battery warnings in "Important Safeguards and Precautions" on page x.

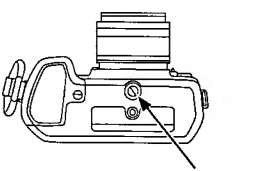
8. Insert the battery holder into the DCS 200 Camera; rotate the screw in the base of the battery holder so that the slit in the screw is horizontal.
9. Engage the screw on the bottom of the battery holder door by giving it a one-quarter turn in the clockwise direction with a coin.

Changing Batteries in the Nikon N8008s Camera

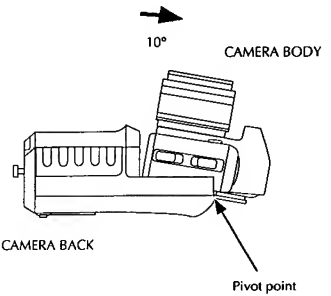
> **CAUTION:** In the following steps you will separate the camera body and the camera back — an action that exposes the imager to the environment. As you complete these steps, be certain that you do not touch the inside of the camera back or the camera, except as directed.

Separating the Nikon N8008s Camera from the KODAK Camera Back

1. Turn off the DCS 200 Camera.
2. If an eyepiece cover is in place over the camera eyepiece, remove it now.
3. If the AC battery charger/adapter is connected, disconnect it from the camera back.
4. Lay the DCS 200 Camera on its back on a flat, steady surface, with the bottom facing you.
5. Loosen the handstrap (do not remove it) by separating the Velcro parts; you may need to slide the buckle down on the lower end of the strap to loosen it.
6. Loosen the large mounting screw.



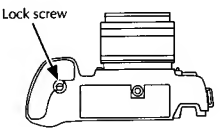
7. Hold down the camera back with one hand while you use the other hand to pivot the camera body up approximately 10°.



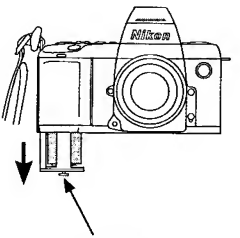
8. Lift the camera body up and away from the camera back.
9. Set the camera down next to the camera back.

Installing New Batteries in the Nikon N8008s Camera

1. Loosen the lock screw on the bottom of the camera battery holder with a coin.



2. Remove the battery holder from the bottom of the camera.

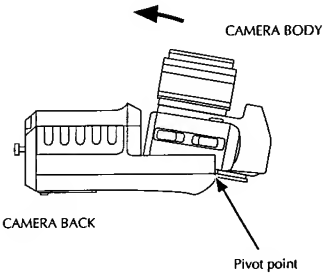


3. Remove the four batteries from the battery holder.
4. Install four new AA-type batteries in the battery holder; carefully position the "+" and "–" ends to match the battery outline marked on the inside of each battery chamber.

   NOTE: Refer to "Nikon N8008s Camera" on page 1-11 for recommended batteries for the Nikon camera.
5. Insert the battery holder.
6. Press the holder into place and tighten the lock screw with the coin.

Reconnecting the Nikon N8008s Camera and the KODAK Camera Back

1. Hold down the camera back with one hand while you use the other hand to position the camera body around the pivot point shown in the figure below.



2. Push the camera body into place against the camera back.
3. Tighten the mounting screw.
4. Reposition the buckle on the lower end of the handstrap and reconnect the Velcro.
5. If you disconnected the AC battery charger/adapter from the camera, you can reconnect it now.
6. If you removed a camera eyepiece cover, replace it now.

The DCS 200 Camera is now ready.

Cleaning the Imager

The imager is the component of the DCS 200 Camera that records light when you take a picture. Even though it is located inside the camera back, it is still possible for the imager to become dirty.

The directions in this section describe how to determine if the imager needs cleaning, and how to clean the imager.

Determining If the Imager is Dirty

There are two ways to determine whether the imager needs cleaning:

- You can take a test picture and look for imperfections in the image that indicate dirt on the imager.
- You can visually inspect the imager for dirt.

Both techniques are described below.

Technique 1: Examine a Test Image

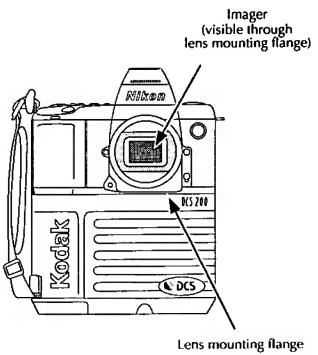
1. Set up the DCS 200 Camera to operate while connected to a computer. (Refer to Chapter 4 "Using the DCS 200 Camera with a Macintosh Computer" or Chapter 5 "Using the DCS 200 Camera with a PC.")
2. Set the lens aperture to f/22, or the highest f number, to provide for maximum depth of field.
3. Take a photograph of a plain white object like a clean, white wall.
4. Examine the image on the computer monitor; imperfections in the image, such as dark clusters or streaks, may indicate a dirty imager.

Technique 2: Visually Inspect the Imager

1. Set up your camera to operate in stand-alone mode (not connected to a computer).

2. Turn off the camera.
3. Remove the lens from the Nikon camera.
4. Turn on the camera.
5. Set the camera to manual exposure mode.
6. Select the bulb setting.
7. Press and hold the shutter release button; the shutter stays open, and the imager is visible through the lens mounting flange.

> **CAUTION:** Do not attempt to clean the imager while the camera is in this state; the shutter can be damaged if you release the shutter button while any object is in the opening.



8. Hold the camera so that light reflects off the imager; visually inspect the imager for grease, fingerprints, lint, or other dirt.
9. Release the shutter release button.
10. Turn off the camera.
11. Mount the lens.
12. Turn on the camera and reset the exposure mode and setting.
13. If the imager is clean, proceed to operate the DCS 200 normally; however, if the imager is dirty, clean it using the following steps.

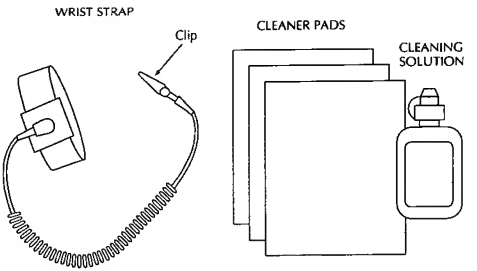
Cleaning a Dirty Imager

> **CAUTION:** In the following steps you will separate the camera body and the camera back — an action that exposes the imager to the environment. Because the imager is sensitive to static discharge, you must observe the static discharge control measures described below.
>
> As you complete these steps, be certain that you do not touch the inside of the camera back (except as instructed).

Separating the Camera from the Camera Back.

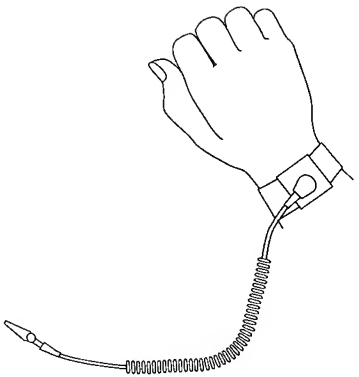
1. Locate the cleaning materials supplied with the DCS 200 Camera. Included are an electrostatic discharge (ESD) wrist strap, low-lint web cleaner pads, and a cleaning solution. The wrist strap is used to provide protection against damaging electronic components of the camera back.

IMPORTANT: Use only the cleaning materials provided with the DCS 200 Camera.



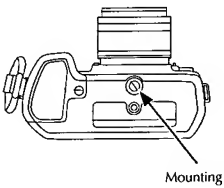
2. Assemble the electrostatic discharge (ESD) wrist strap (if assembly is necessary). The wrist strap protects electronic components of the camera back from static damage.

3. Attach the strap to your hand.

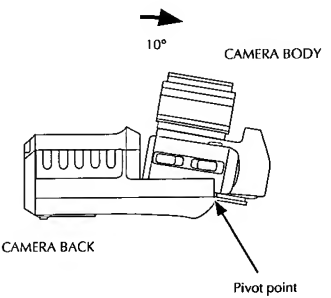


4. Turn off the DCS 200 Camera.
5. If the AC battery charger/adapter is connected, disconnect it from the camera.
6. Lay the DCS 200 Camera on its back on a flat, steady surface, with the bottom facing you.

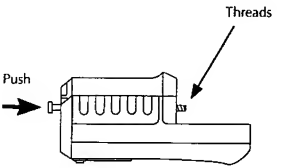
7. Loosen the handstrap (do not remove it) by separating the Velcro parts; you may need to slide the buckle down on the lower end of the strap to loosen it.
8. Loosen the large mounting screw in the center of the base of the camera back until it turns freely.



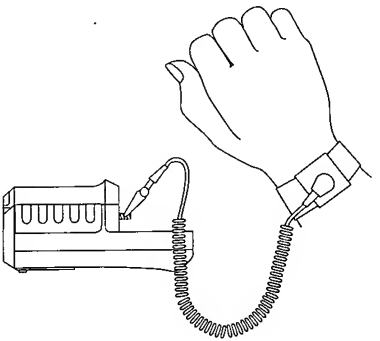
9. Hold down the camera back with one hand while you use the other hand to pivot the camera body up approximately 10°.



10. Lift the camera body up and away from the camera back.
11. Set the camera aside.
12. Push the head of the mounting screw until it is flush against the bottom of the camera back. This action exposes the threads on the other end of the mounting screw.



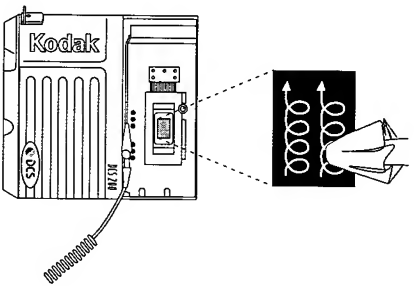
13. Attach the clip on the end of the ESD wrist strap cable to the exposed threads on the end of the mounting screw; you and the camera will now be at the same potential.



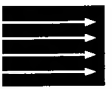
Wiping the Imager

1. Examine the imager visually. If there is lint on the imager (but not grease, fingerprints, or other dirt), continue at step 9; otherwise continue with the next step.

2. Dampen one corner of the web cleaning pad sparingly with the cleaning solution.
3. Wrap the damp corner of the cleaner pad over the forefinger of one hand.
4. Hold the camera back firmly in place on the flat surface with your other hand.
5. Gently scrub the imager with the damp corner of the cleaner pad; use a circular motion, and move over the entire imager. This action should dislodge dirt and/or remove grease and fingerprints.



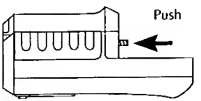
6. Wipe off residue on the imager surface by wiping repeatedly straight across the imager with a dry corner of the cleaning pad.



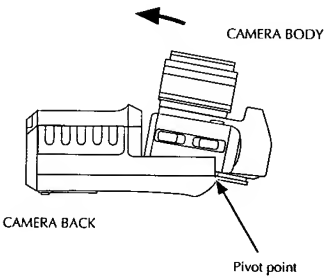
7. Lift the camera back, and examine the imager in the light to determine if it has been cleaned successfully.
8. If the imager is still dirty, repeat steps 2 through 7.
9. Place the camera back on a flat surface and breathe gently on the imager to fog its surface.
10. Wipe repeatedly straight across the imager with a dry corner of the cleaner pad.
11. Lift the camera back, and examine it in the light to determine if it has been cleaned successfully.
12. If there is still lint on the imager, repeat steps 9 through 11.

Reassembling the DCS 200 Camera

1. Remove the ESD wrist strap from the mounting screw and from your wrist.
2. Push the threaded end of the mounting screw back into the camera back.



3. Hold down the camera back with one hand while you use the other hand to position the camera body around the pivot point shown in the figure below.



4. Push the camera body into place against the camera back.
5. Tighten the mounting screw.
6. Reposition the buckle on the lower end of the handstrap and reconnect the Velcro.

The DCS 200 Camera is now ready.

7

Reference — Kodak Driver for Adobe Photoshop Software

This section of the manual includes introductory material about the Kodak Driver for Adobe Photoshop Software, and then includes detailed information and explanations of:

- The file format used for image archive files.
- The commands provided by the driver.
- The messages provided by the driver.
- Troubleshooting for the driver.

Introduction

The driver supplied by Kodak for use with Adobe Photoshop software provides a variety of features that allow you to work with images on the DCS 200 Camera (with or without an internal hard disk), on an optional external hard disk, and on the Macintosh computer hard disk. The driver allows you to:

- Acquire single images from the DCS 200 Camera or an external hard disk into Adobe Photoshop. You can then edit the images using Photoshop features and save them to the Macintosh computer hard disk in a variety of file formats.
- Select one or more images in the image window, select all images, or select the last image from the DCS 200 Camera.
- Copy one or more selected images from the DCS 200 Camera hard disk or an external hard disk to a file called an image archive or archive file, on the Macintosh computer hard disk.
- Copy one or more selected images from one archive file to a new archive file.
- Move one or more selected images from the DCS 200 Camera hard disk or an external hard disk to a new archive file on the Macintosh computer hard disk or from one archive file to a new archive file. Unlike copying images, this action also deletes images from the DCS 200 Camera hard disk, or the external hard disk, or archive file after moving them to the new archive file on the Macintosh computer hard disk.
- Delete selected images from the DCS 200 Camera hard disk or an external hard disk or delete images from an image archive file on the Macintosh computer hard disk previously saved by this driver.

File Format Used for Image Archive Files

Images saved as archive files to the Macintosh computer hard disk by clicking COPY TO FILE or MOVE TO FILE from within the Photoshop driver supplied by Kodak can be read only with the Photoshop driver. An archive file on the Macintosh computer hard disk can include multiple images. In addition to image data, an archive file includes thumbnails for each of its images, and all data from the "INFO" box for each of its images.

Color and monochrome images in these Macintosh computer archive files are composed of uninterpolated data; they have not been "acquired" into Photoshop. This means they contain the 1.5 megabytes (MB) of data generated from the 1524 x 1012-pixel array in the camera back and stored on the DCS 200 Camera hard disk or on an external hard disk. If you select ten images (color or monochrome) from the DCS 200 Camera or an external hard disk and copy or move them to a single image archive file on the Macintosh computer hard disk the size of the file will be approximately 15 MB. If you use the Photoshop driver to interpolate a single color image by acquiring it into Photoshop, the size of the single image file when saved in Photoshop format will be approximately 4.5 MB. Ten "acquired" color images will occupy approximately 45 MB. (Each acquired monochrome image saved in Photoshop format is 1.5 megabytes.)

Opening one of these archive files from the Macintosh computer Finder places you in Adobe Photoshop with no windows opened. (Each of the images within a single archive file does not open into a separate Photoshop window.) In order to work with an image from an archive file you must open the file as described in the next section. You can then select a single image from an archive file, acquire it into a Photoshop window, edit the data, and save the image as a Photoshop file.

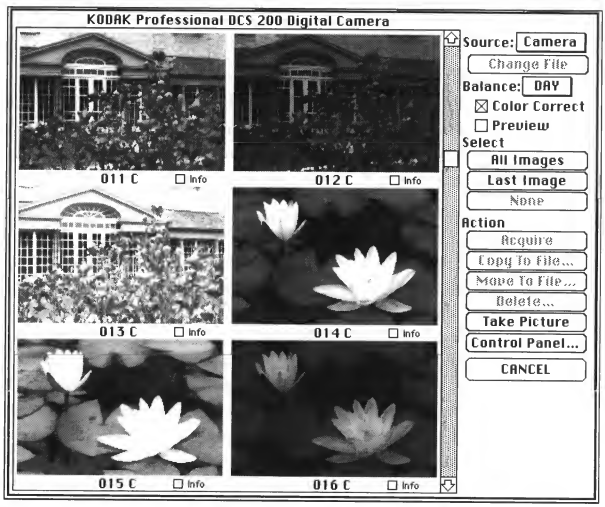
Commands

To use these features, you must first install the driver by following the series of one-time steps described in "Installing the Kodak Driver for Adobe Photoshop Software" on page 4-33. Then each time you want to use the driver, you run Photoshop, and choose KODAK DCS 200 from the ACQUIRE submenu of the Photoshop FILE menu.

When you choose KODAK DCS 200, you will see the following dialog box on your Macintosh computer monitor.

The first time you choose this driver, a file named DCS 200 Preferences is created in your System Folder. The settings you chose while in the driver are automatically maintained in that file from session to session.

NOTE: If you are using a camera without an internal or external hard disk, and there is an image in the camera, you will only see that single image in the window. As each new image is made, it replaces the single image in the camera and in this window.



The image window displays thumbnails, either from images on the DCS 200 Camera hard disk, from an external hard disk, or from image archives previously saved in a file on the Macintosh computer hard disk by this driver.

Thumbnails appear in the image window in the same logical order that images appear on the DCS 200 Camera hard disk, or on an external hard disk, or in the Macintosh computer archive file. You can scroll through the images by moving the vertical scroll box or scroll arrows on the window, or by pressing the Page Up, Page Down, Home, or End keys on

the Macintosh computer keyboard. Depending on the size of your monitor, you will see two or more thumbnails on each row, and two or more rows of thumbnails.

When working with images from a file from the Macintosh computer hard disk instead of images from the camera or external hard disk, the filename appears at the top of the image window instead of the words "KODAK Professional DCS 200 Digital Camera."

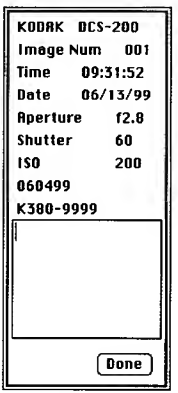
Three-digit image numbers appear beneath each image. A "C" after the image number — if it appears — indicates a color image. If you click the small square "INFO" box beneath the lower right corner of an image, the information box, shown on the next page, appears on the screen. To close the information box, click on the DONE button. The data displayed includes, from top to bottom: the image number, time (displayed in 24-hour format) and date the image was made, the camera aperture, shutter speed, ISO setting, firmware version number (a date) of the camera when this image was produced, and the camera serial number. (The firmware is the control programming in the camera.) The camera aperture and shutter speed appear in this window as they appear in the camera LCD panel and viewfinder. The time and date are maintained by a permanent battery in the DCS 200 Camera. You update the date and time with the SET CLOCK choice described on page 7-18.

Finally, a text box at the bottom of the information box allows you to enter short descriptive material, up to 254 characters, regarding the image. Use the mouse or arrow keys to move through text once entered. The text will be saved with the image (on the hard disk in the camera back or on an external hard disk), and will be saved with the image if it is moved or copied to an archive file.

The text is not saved when the image is acquired in Photoshop. However, you can copy or cut text from the text box for the image, and after acquir-

ing the image in Photoshop, you can add the text to the image by pasting it into the dialog box that appears when you use the Photoshop Type Tool.

NOTE: If your computer monitor provides a software switch that allows you to center dialog boxes (for.example SuperMac or E-Machines monitors), you may wish to turn this feature off so that an information box does not cover images on the screen.



An explanation of each additional option follows.

Source

Allows you to work with images from the DCS 200 Camera (choose Camera from the popup menu), from a file on the Macintosh computer

(choose FILE from the popup menu), or with images from an external hard disk (choose EXT DISK from the popup menu). CAMERA is the default. When working with a Macintosh computer file, the filename appears at the top of the image window.

When you open the driver, the software looks first to the source in use at the end of your previous work session. If that source is not available (for example if you have deleted the file you were using), the software will look for a camera, then for an external hard disk, and if neither is found, for an archive file.

CHANGE FILE

Allows you to close the current archive file (its contents are shown in the image window), and open another archive file from the Macintosh computer hard disk. Click on this button to display a standard Macintosh computer open file dialog box. This button is dimmed unless you select FILE as the SOURCE.

BALANCE

This option applies only to color images.

Select an option to correspond to the original lighting conditions under which you made the image. The option you select will be used for color correction by the driver when the image is acquired. The actions described in this section do not affect the images stored in the camera (or on an attached external hard disk that has been used with the DCS 200 Camera); instead, these actions only affect the acquired image.

NOTE: If thumbnails or a preview are being viewed in color (you change to COLOR THUMBNAILS on the Control Panel), any changes you make in the BALANCE setting is immediately visible on the computer monitor.

The BALANCE popup menu provides the following choices.

DAY	Uses daylight color-correction values when acquiring the image.
TUNG	Uses tungsten color-correction values when acquiring the image.
TungBG40	Uses special tungsten color-correction values when acquiring the image, assuming you used a Schott BG-40 1mm filter (refer to "Optional Camera Equipment" on page 1-9 for availability information). Without the filter, color results may not be very accurate with a tungsten light source; however, acceptable color rendition can be obtained with this filter under tungsten lighting.
FLUOR	Uses fluorescent color-correction values when acquiring the image.
FLASH	Uses flash color-correction values when acquiring the image.
CLICK	Allows you to provide color balancing data by clicking on a white or light gray area of a thumbnail or a preview. CLICK is always the preferred option. After choosing CLICK, the mouse pointer becomes a crosshair. Click on a white or light gray area of the image in a thumbnail or preview that is not overexposed. White balance values are calculated based on the point at which you clicked. The values are used for color balancing this and subsequent images you acquire until you change the values by choosing CLICK or another item from the BALANCE popup menu. When using CLICK, we suggest that you view the image you want with PREVIEW, which displays a larger image and there-

fore more easily allows you to find a white area that is not overexposed. With the image you want displayed in preview mode, and with CLICK chosen from the BALANCE popup menu, move the crosshair cursor to a white or light gray area. Move the cursor to a spot on the image where each of the red (r), green (g), or blue (b) color values displayed below the image are as high as possible, but lower than 255.

While in PREVIEW mode, after you click, you view the result of the change on the preview image.

NOTES: When you click, you may see the message: ONE OF THE COLORS IS SATURATED. PLEASE PICK ANOTHER POINT FOR BALANCING. As prompted, click on another point.

If there is no white or light gray area in the image, take a photograph of a neutral gray or white card (for example KODAK Gray Cards, Publication No. R-27) under the current light conditions. Click on the preview (or thumbnail) of this image to set color correction values for these lighting conditions; then acquire the desired image(s).

NONE — Uses a unity gain ("1" is used as the color correction value for red, green, and blue), for the color correction values when acquiring the image. This choice may be useful for images made under unusual lighting conditions when the other choices do not provide the desired results.

COLOR CORRECT

This option affects only color images.

Enhances the color in many images when you acquire the image. (When "on" an X appears in the check box to the left of this option.) In the rare

case that the acquired image quality is unsatisfactory, return to the driver, turn this option off and acquire the image again; no color correction will be applied.

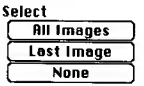
Preview

Presents a single, enlarged version of the image — in color on a color monitor if the image is color — in the image window. You can scroll through images while in preview mode. Data displayed below the preview image indicate the image number, the current X and Y pixel location of the crosshair cursor on the preview image, and the red, green, and blue values at the current cursor location.

(Refer to "Click" on page 7-9 for an explanation of the use of Preview with that feature.)

Select

Highlights images. (A narrow border surrounds highlighted images.) The buttons are useful for selecting images to delete, or to copy or move to the Macintosh computer hard disk.



IMPORTANT: Select chooses images from the DCS 200 Camera (or from an external hard disk or from an archive file), not just thumbnails in the image window. For example, suppose you click on Last Image and then click on Delete. The action does not merely delete the last image from computer memory, but in addition, these actions will delete the last image from the source (DCS 200 Camera hard disk, or external hard disk or archive file).

The three select choices work with images not currently visible in the image window. For example, clicking on All Images selects thumbnails of

all images, not only those visible in the image window; if you scroll the image window, you will see that all images are selected.

You can also select a single image by clicking on it. You can select multiple images by clicking on one image and then adding (or subtracting) from the selection by shift-clicking on other images (hold down the Shift key while you click on additional images).

Select choices are dimmed when PREVIEW is on and when there are no images on the camera or external hard drive.

ALL IMAGES

Highlights all images. This choice is dimmed when the SOURCE is CAMERA or EXT DISK and there are no images on the camera or external hard disk.

LAST IMAGE

Highlights the last image. This choice is dimmed when the SOURCE is FILE. This choice is also dimmed when the SOURCE is CAMERA or EXT DISK and there are no images on the camera or external hard disk.

NONE

Click on this button to deselect all highlighted images.

ACTION

Provides the following capabilities.

ACQUIRE

Allows you to acquire a single highlighted image into Adobe Photoshop. You can achieve the same effect by double-clicking on the thumbnail.

If more than one image is currently highlighted, you will acquire only the first of the selected images. (Photoshop allows you to acquire only one image at a time.)

You only acquire image data. You do not acquire the thumbnail, color correction data, or data from the INFO box. However, you can copy or cut text from the text box for the image, and after acquiring the image in Photoshop, you can add the text to the image by pasting it into the dialog box that appears when you use the Photoshop Type Tool.

NOTES: If you are in Photoshop, but not within the driver, you can bypass several steps and acquire the last image directly from the camera, without the need to open the acquire dialog box. Press and hold the command key (⌘). Then choose KODAK DCS 200 from the ACQUIRE submenu of the Adobe Photoshop FILE menu. Continue to depress the key. The acquire dialog box will appear. Then release the command key. Wait as the image is acquired and appears in a Photoshop window.

The ACQUIRE button is dimmed until you select an image(s).

COPY TO FILE...

Copies highlighted images, whether currently visible in the image window or not, to a single image archive file on the Macintosh computer hard disk. The SOURCE can be either CAMERA, FILE, or EXT DISK. A standard Macintosh computer save dialog box appears. Image data, a thumbnail, an image number (matching the original number used for the image on the DCS 200 Camera), and other data from the "INFO" box are saved for each image.

NOTES: The COPY TO FILE button is dimmed until you select an image(s).

Do not take a new picture while an image(s) is being copied to a file.

MOVE TO FILE...

Performs the same function as COPY TO FILE, but in addition deletes the highlighted images (whether currently visible in the image window or not), from their source — a DCS 200 Camera hard disk, an external hard disk, or an archive file on the Macintosh computer hard disk. A dialog box provides you with the option of deleting the images.

NOTES: If the SOURCE is FILE and the file is locked, this button is dimmed, preventing you from changing the file.

The MOVE TO FILE button is dimmed until you select an image(s).

DELETE...

Deletes highlighted images (whether currently visible in the image window or not), from their source — either the DCS 200 Camera hard disk, an external hard disk, or the Macintosh computer archive file. A dialog

box warns you that images will be deleted. If all images in an archive file are deleted, the complete file is deleted.

NOTES: The DELETE button on the camera back does not function when the camera is connected to a computer; use the DELETE button on the software driver to delete images in this configuration.

The DELETE button is dimmed until you select an image(s), or if the SOURCE is FILE and the selected file is locked.

TAKE PICTURE

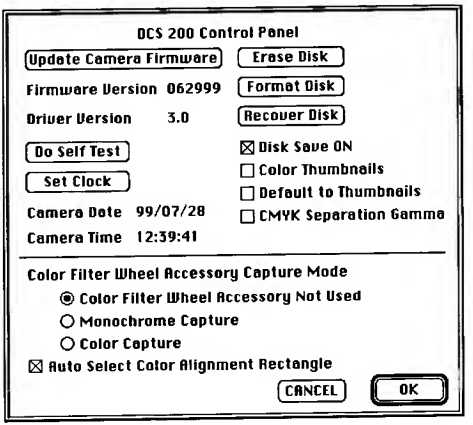
Issues a command that causes the camera to take a picture. There may be a several second delay to allow the Nikon N8008s to focus if needed. To take a picture the DCS 200 Camera must be connected to the Macintosh computer, the SOURCE must be CAMERA (the button is dimmed when the source is FILE or EXT DISK), and the DCS 200 Camera must be turned on.

CONTROL PANEL

Displays the following dialog box. The lower portion of the dialog box applies only if the KODAK Color Filter Wheel Accessory (see page 1-9) is in use, and may appear differently if you have that accessory attached.

IMPORTANT: When the camera is attached to the computer, if you hold down the Control key when you select KODAK DCS 200 from the ACQUIRE submenu of the Photoshop FILE menu, you will bring up this dialog box directly. This is particularly helpful if there are corrupt data on the camera hard disk which prevent the normal dialog box from appearing. Using the Control key as described here brings you directly to this dialog box from which you can erase or format the hard disk or update camera firmware.

If no camera is currently connected to the computer, most items in the box below are not in effect and are therefore dimmed or do not appear.



UPDATE CAMERA FIRMWARE Select this choice to update the firmware in the camera, the non-volatile memory containing the control programming for the camera. The firmware controls most of the features of the camera.

The software driver looks for a file named DCS200.HEX, which must be in the same folder as the Photoshop driver. The contents of the file DCS200.HEX are permanently transferred into the firmware in the camera. Approximately 20 seconds are required. The camera back liquid crystal display (LCD) displays the SCSI indicator while the transfer

occurs. An error message is displayed if the DCS200.HEX file is not found.

This feature allows you to keep the firmware in the camera up-to-date without sending the camera to a service center, since new versions of the DCS200.HEX file that you receive can be copied to the camera with this command. It also allows you to replace the firmware in the camera with the current version if the firmware in the camera is acting erratically.

If you are unable to open the driver (and therefore cannot access the Control Panel containing the button), hold down the Control key on your keyboard while choosing the driver name from the ACQUIRE submenu. This will bypass the normal access to the driver and will place you directly in the Control Panel from which you can click on the UPDATE CAMERA FIRMWARE button.

If you are still unable to access the Control Panel, remove the camera back battery holder. Hold down the DELETE button on the camera back while you reinsert the battery holder (filled with charged batteries) and wake the camera. You see the characters "SCSI" on the camera back LCD. Then update camera firmware as described above.

NOTES: If you are working with a camera without an internal hard disk, updating camera firmware deletes an image, if present, in RAM.

The UPDATE CAMERA FIRMWARE button may be dimmed when some cameras are connected to some Macintosh PowerBook computers. You will not be able to update that camera from that Macintosh computer; instead, update firmware by connecting that camera to another Macintosh computer model. If further assistance is needed, contact Kodak.

If you are using the KODAK Color Filter Wheel Accessory, disconnect it before updating camera firmware (this will prevent an extra load from being placed on the batteries). Reconnect the accessory after firmware has been upgraded.

FIRMWARE VERSION The version of the firmware (control programming) in the camera currently attached to the computer.

NOTE: This firmware version may be different from the firmware version displayed in an information box for an individual image. The version in the control panel is the version of the camera currently connected to the computer. If a camera with different firmware was used to produce an image, then a different value will appear in the information box for that image.

DRIVER VERSION The version of the software driver for Photoshop currently in use.

DO SELF TEST Click this button to perform a diagnostic self-test of the DCS 200 Camera. Messages inform you of the outcome of the self-test. These data can be helpful for field debugging before you call Kodak with a problem.

NOTE: This action deletes an image, if present, in RAM. This means that if you are working with a camera without an internal hard disk or with a camera with a hard disk but disk save is off, you will lose the image in RAM if one was present.

SET CLOCK Click this button to set the date and time in the DCS 200 Camera. The date and time (in 24-hour format) are maintained in the camera back with a separate battery that is slowly recharged from the batteries you install. When you click this button, the date and time are automatically retrieved from the Macintosh computer system clock and copied to the DCS 200 Camera.

Each image is date and time-stamped when made. These data are shown when you display the information box for the thumbnail or the preview of an image by clicking on the small square "INFO" box beneath the lower right corner of the thumbnail or preview.

The date and time do not appear on the camera back LCD.

CAMERA DATE Displays the date that is currently stored in the camera; this date becomes part of the date and time-stamp saved and displayed for each image in the image information box. If the control panel is not displaying the date "today," click on the SET CLOCK button to update this date from your computer system clock.

CAMERA TIME Displays the time that is currently stored in the camera; this time becomes part of the date and time-stamp saved and displayed for each image in the image information box. If this is not displaying the current time, click on the SET CLOCK button to update this time from your computer system clock.

ERASE DISK Select this choice to erase a hard disk, either an internal hard disk in the camera or an external hard disk currently connected to the Macintosh computer (depending on which is chosen as the SOURCE). This is the same as selecting all images from the image window and deleting them by pressing the DELETE button.

FORMAT DISK Click this button to format the hard disk in the camera or an external hard disk (depending on which is chosen as the SOURCE). This action is similar to formatting a floppy diskette

or hard disk on your computer system. Existing images on the hard disk are permanently erased and cannot be recovered.

If you are having unexplainable problems with the hard disk in the camera or with an external hard disk (perhaps you are losing images, or you have been seeing an "E" followed by a single digit, for example "E2," on the camera back LCD), use this feature to reformat the hard disk and try again.

IMPORTANT: If you are working in an environment where security is a consideration, you should reformat the camera hard disk or external hard disk with this button after you save images you need to your computer hard disk. This will ensure that images on the hard disk cannot be recovered with the RECOVER DISK button described next.

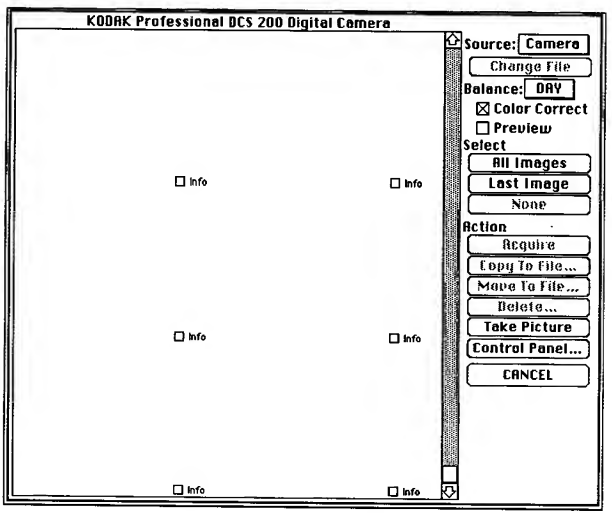
RECOVER DISK Click this button to recover images that have been deleted from an internal hard disk in the camera or from an external hard disk (depending on the current SOURCE). The images you recover may have been previously deleted with:

- The DELETE button on the outside of the camera back.
- The DELETE button in the software driver.
- The ERASE DISK button on the CONTROL PANEL of the software driver.

You cannot use this option to recover the images that were deleted when you formatted the disk with the FORMAT DISK choice on the Control Panel.

When you click the RECOVER DISK button, every image location on the hard disk is examined and recovered. The most recent image that was in each location is recovered.

Blank images at the end of an internal hard disk are also "recovered" as shown below. This means that the internal hard disk when recovered is full of images, preventing you from taking additional images. You will need to delete images before you can take additional pictures; these blank images can be selected by clicking and shift-clicking on them and can then be deleted by clicking on the DELETE button. (Blank images are not placed at the end of a recovered external hard disk.)



The following examples explain the action of this button.

Example 1. Suppose that you have a new camera with an internal disk capable of storing 50 images, and that you have taken ten pictures and delete one. If you recover the hard disk, you will have all ten images — the original nine images will still be there, and you will have recovered the tenth image. In addition you will recover 40 blank images at the end of the disk.

Example 2. Suppose that you have a new camera with an internal disk capable of storing 50 images, and that you have taken ten pictures, have deleted one, and taken another picture. In this case, the newest picture overwrites the deleted tenth image. If you recover the hard disk, you will obtain fifty images, the nine original images, the latest picture you have taken, plus forty blank images at the end of the hard disk. The picture you deleted that was overwritten with a new image cannot be recovered.

Example 3. Suppose that you have filled the hard disk with images, and erased all images. If you recover the disk with this button before you take any additional pictures you will have recovered all of the images you erased.

Example 4. Suppose you have a hard disk capable of holding 50 images. Over time you have taken pictures, erased the disk, taken more pictures, deleted some, taken additional pictures, and so on — never having more than 40 images on the hard disk. As you take new pictures while there are still active images on the hard disk, the new images are written into the next empty location on the hard disk;

deleted images that are overwritten become unrecoverable. If you delete all images and take three new pictures, the three new images will overwrite the oldest three images on the hard disk. If you recover the disk, you will recover 50 images. The three new images will be at the start of the disk, followed by the 37 images from the end of the disk that have not been overwritten by previous actions, followed by 10 blank images.

IMPORTANT: If you are working in an environment where security is a consideration, you should reformat the disk with the FORMAT DISK button described earlier after you save needed images to your computer hard disk. This will ensure that images cannot be recovered with the RECOVER DISK button.

DISK SAVE ON When on (an X appears in the check box to the left of this option when on), new pictures you take are saved to a hard disk. Click this feature off when you do not want images saved to disk. When off, each new picture you take replaces the previous one.

COLOR THUMBNAILS Click this feature on (an X appears in the check box to the left of this option when on), to display thumbnails in color.

DEFAULT TO THUMBNAILS Displays thumbnails each time the driver is accessed, instead of using the previous display setting. When "on," if you exit from the driver while in PREVIEW mode, the next time you enter the driver, you will be displaying thumbnails instead of a preview image. This can be an advantage since thumbnails appear more quickly than a preview.

CMKY SEPARATION GAMMA When on (an X appears in the check box to the left of this option when on), images you acquire will have a gamma applied that is lower than the default value. The lower gamma results in less noise in the CMYK channels when you separate the image.

COLOR FILTER WHEEL ACCESSORY CAPTURE MODE The items in this portion of the control panel apply only when that optional accessory is in use. If you have that accessory, refer to its manual for an explanation of these options.

CANCEL Exits from the dialog box, canceling changes you may have made to the DISK SAVE ON, COLOR THUMBNAILS, and DEFAULT TO THUMBNAILS choices. Alternately, press the Escape key to exit from the dialog box.

OK Exits from the dialog box.

Messages — Kodak Driver for Adobe Photoshop Software

You use Adobe Photoshop software on your Macintosh computer to acquire images from the DCS 200 Camera; to do so, you choose KODAK DCS 200 from the ACQUIRE submenu of the Photoshop FILE menu. The Photoshop software driver was designed by Kodak specifically for this purpose. That driver adds new messages to Photoshop. An explanation of those messages — listed in alphabetical order — follows.

NOTES: For an explanation of other Adobe Photoshop messages, refer to the instructions for that product.

A numeric code may print at the end of a message. Record it should you contact Kodak.

Message	Possible Cause	Suggested Solution
"A colon (:) is not allowed in a filename."	During a "Copy to File" or "Move to File" operation, you have entered a colon as part of a filename.	Use a filename without a colon.
"A Hardware Error occurred during the Self Test"	An unspecified hardware problem occurred.	Try the self test again. If necessary, shut down the computer, turn off the camera, and disconnect the camera from the computer. Reconnect your equipment, restart, and try again.

continued

Message	Possible Cause	Suggested Solution
continued from previous page "A Hardware Error occurred during the Self Test"		Try again. If the problem continues, download the camera firmware, and try again. If the condition persists, if possible copy important images to an archive file, then format the disk in the camera (which will erase the hard disk), and try again. If you continue to have problems, contact Kodak.
"A SCSI Error occurred. Please turn Camera off and then on again or check your external drive."	There may be one of a variety of problems, including loose or incorrect cables, improper SCSI configuration, and so on.	Shut down the computer, turn off the camera, and disconnect the camera or external hard disk from the computer. Check all SCSI connections and cables. Reconnect your equipment, restart, and try again.
"Bad character in name, or can't find that disk."	During a "Copy to File" or "Move to File" operation, you have entered a colon as part of the filename.	Use a filename without a colon.
"Bad Informational data has been found in the data. Continue and save the rest of the images?"	You are trying to copy or move image(s) to an archive file and one or more of the images is a blank image.	Click OK to copy or move all selected non-blank images to the archive file, or click Cancel to cancel the operation without creating the file.

Message	Possible Cause	Suggested Solution
"Blue plane X shift value was too large. Acquiring image with no shift. Manual shifting may be necessary. Try selecting another area."	The image could not be correlated. (This message can appear only while using the KODAK Color Filter Wheel Accessory.)	Try again with a different color balance or a new click position; or manual shifting may be necessary in Photoshop.
"Blue plane Y shift value was too large. Acquiring image with no shift. Manual shifting may be necessary. Try selecting another area."	The image could not be correlated. (This message can appear only while using the KODAK Color Filter Wheel Accessory.)	Try again with a different color balance or a new click position; or manual shifting may be necessary in Photoshop.
"Cannot have same file open for acquiring from and saving to."	While working with an archive file (the Source is File), you have selected images, chosen "Copy to File" or "Move to File," and tried to save the images using the same filename as the opened archive file.	Try again, but this time enter a filename different from the name of the open archive file.
"Color Filter Accessory was not found or was not able to move."	Cables are loose or connected incorrectly.	Shut down the computer, turn off the camera and disconnect the cables. Reconnect your equipment, restart, and try again.
	There are weak batteries in the camera back.	Charge the batteries, or replace the weak batteries with fresh ones. We recommend that you use the AC battery charger/adapter when using the KODAK Color Filter Wheel accessory.

Message	Possible Cause	Suggested Solution
"Could not acquire this image because informational data was invalid."	You have tried to acquire a blank image, or an image that has been corrupted.	Blank images cannot be acquired. Work with another image. If it is not a blank image, you may not be able to acquire this image.
"Could not save any images. All images had bad informational data."	You have tried to save a blank image to an archive file, or an image that has been corrupted.	Blank images cannot be saved to archive files. Work with another image. If it is not a blank image, you may not be able to acquire this image.
"Could not save because the disk is full. XXXX kilobytes disk space needed to save."	You are trying to save a file that is larger than the available space on the selected disk.	Select another disk if available, or delete files from the disk and try again. The message indicates the total kilobytes needed to save the file.
"Delete ALL images in File?"	You are about to delete all images in an archive file on your computer hard disk (not only the images in the image window).	Click OK to delete all images in the archive file, or Cancel to cancel the operation.
"Delete ALL images on External Drive?"	You are about to delete all images on an external hard disk (not only the images in the image window).	Click OK to delete all images on the camera hard disk, or Cancel to cancel the operation.

Message	Possible Cause	Suggested Solution
"Delete ALL images on the Camera?"	You are about to delete all images on the DCS 200 Camera internal hard disk (not only the images in the image window).	Click OK to delete all images on the camera hard disk, or Cancel to cancel the operation.
"Disk has been recovered successfully."	You initiated a disk recovery by clicking on Recover Disk in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"Do you want to delete these images?"	After moving image(s) to an archive file, the software driver asks you to confirm that you want the selected images to be deleted.	Click OK or Cancel as desired.
"Driver may not be compatible with this version of Photoshop."	The driver and your version of Adobe Photoshop are incompatible.	Adobe Photoshop version 1.0.7 or higher is required. Upgrade if necessary.
"Error with 'Copy to File' file."	A problem occurred while writing the file (for example, a hard disk problem).	Try again. Write the file to another disk if available.
"Error reading from Source Archive file."	An unusual condition is detected when reading an archive file from your hard disk.	You will not be able to access images from this file.

Message	Possible Cause	Suggested Solution
"Firmware download failed. Check SCSI bus."	There may be one of a variety of problems, including loose or incorrect cables, improper SCSI configuration, and so on.	Shut down the computer, turn off the camera, and disconnect the camera from the computer. Check all SCSI connections and cables. Reconnect your equipment, restart, and try again.
	There is an unusual condition with the driver for Photoshop.	Choose the driver again from the Acquire submenu. If the problem recurs, shut down your Macintosh computer; restart the computer and Photoshop, and try the driver again. If the condition persists, delete the KODAK DCS 200 Camera file from your computer hard disk, and install a new copy of the same file as described in "Installing the Kodak Driver for Adobe Photoshop Software" on page 4-33.
"Firmware Update failed. Could not find firmware 'DCS200.HEX' file from Macintosh."	The "DCS200.HEX" file was not found in the same folder as the "KODAK DCS 200" file.	Place a copy of the "DCS200.HEX" file in the same folder as the "KODAK DCS 200" file. The DCS200.HEX file was supplied by Kodak on the diskette labeled "KODAK Driver for ADOBE PHOTOSHOP Software for use with KODAK Professional DCS 200 Digital Cameras."

Message	Possible Cause	Suggested Solution
"Firmware Update failed. Could not load firmware 'DCS200.HEX' file from Macintosh."	There is an unusual condition with the driver for Photoshop.	Choose the driver again from the Acquire submenu. If the problem recurs, shut down your Macintosh computer; restart the computer and Photoshop, and try the driver again. If the condition persists, delete the KODAK DCS 200 Camera file from your computer hard disk, and install a new copy of the same file as described in "Installing the Kodak Driver for Adobe Photoshop Software" on page 4-33.
"Firmware Update has completed successfully."	You initiated a camera firmware update by clicking on Update Camera Firmware in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"Format Disk? ALL Images will be lost and cannot be RECOVERED. This can take several minutes"	You have clicked the Format Disk button on the Control Panel.	Click OK to format the camera hard disk and erase all images on the hard disk — without the option of recovering them. Or click Cancel.
"Format has completed successfully."	You initiated disk formatting by clicking on Format Disk in the Control Panel. It was completed successfully.	Click OK; no other action is required.

Message	Possible Cause	Suggested Solution
"Image is no longer available. Please try again."	You have taken a picture while the software is acquiring an image from the camera.	Try again, but do not take a picture until the acquire process has been completed for the current image.
"Informational data not available for this image."	You have clicked on the "Info" box for a blank image.	Click OK. Work with another image.
"Internal Error XXX. Restart MACINTOSH computer and try driver again. Or replace driver from original disk."	There is an unusual condition with the driver for Photoshop.	Choose the driver again from the Acquire submenu. If the problem recurs, shut down your Macintosh computer; restart the computer and Photoshop, and try the driver again. If the condition persists, delete the KODAK DCS 200 Camera file from your computer hard disk, and install a new copy of the same file as described in "Installing the Kodak Driver for Adobe Photoshop Software" on page 4-33.
"Last file used is invalid. Requesting new file."	You have switched from Photoshop to the Finder while running under the MultiFinder. While in the Finder you have changed the location of an opened file.	Choose a different file from the Open dialog box.
	You have a damaged hard disk on your computer.	Have the hard disk repaired.

Message	Possible Cause	Suggested Solution
"Modified text can not be saved to file because file is locked. All modified text will be lost."	You have typed text in the information box for an image in an archive file but the archive file is locked.	Unlock the file and try again.
"More than one image was selected. Only the first one will be acquired."	You have selected more than one image and then clicked Acquire.	Click OK to acquire the first image of the selected thumbnails. Or click Cancel, select a single image, and then click Acquire.
"Not enough memory. Try closing windows or increasing application memory size."	There is not enough memory to complete the operation.	If unneeded windows are opened, close them and try the operation again. Or quit Photoshop and increase its memory size. (Select Photoshop on the Finder. Choose Get Info from the File menu. Increase the memory size.) Restart Photoshop and try the operation again.
"One of the colors is saturated. Please pick another point for balancing."	After choosing Click from the Balance menu you have clicked the crosshair on an overexposed area of the thumbnail.	Choose Click again from the Balance popup menu and then click on a white area that is not overexposed. (Refer to the explanation of Click on page 7-9; it describes using Preview with Click to avoid choosing an overexposed area.)

Message	Possible Cause	Suggested Solution
"Preferences file could not be saved."	The system disk is full, is write protected (for example on a SyQuest disk), or there is a problem with the system disk.	Create room on the system disk, remove write protection from the system disk, or have the system disk repaired.
"Red plane X shift value was too large. Acquiring image with no shift. Manual shifting may be necessary. Try selecting another area."	The image could not be correlated. (This message can appear only while using the KODAK Color Filter Wheel Accessory.)	Try again with a different color balance or a new click position; or manual shifting may be necessary in Photoshop.
"Red plane Y shift value was too large. Acquiring image with no shift. Manual shifting may be necessary. Try selecting another area."	The image could not be correlated. (This message can appear only while using the KODAK Color Filter Wheel Accessory.)	Try again with a different color balance or a new click position; or manual shifting may be necessary in Photoshop.
"Self test has completed successfully."	You initiated a self test by clicking on "Do Self Test" in the Control Panel. It was completed successfully.	Click OK; no other action is required.
"The Camera has been disconnected."	The DCS 200 Camera and the computer have been disconnected.	Turn off the camera and the computer, reconnect the cable, and try again.

Message	Possible Cause	Suggested Solution
"The camera was not found. Try the following. • Wake up Camera • Turn on Camera power • Check all cables • Check for SCSI ID conflict • Check for dead batteries. • Switch to an archive file."	The camera is not awake.	Wake the camera and click the Try Again button.
	You chose KODAK DCS 200 Camera from the Acquire submenu of the Photoshop File menu while the power to the DCS 200 Camera is off.	Slide the power switch to on, wake the camera, and click the Try Again button.
	The SCSI cable is not connected properly.	Verify that the SCSI cable is connected properly between the computer and the DCS 200 Camera. If not, turn both off, reconnect the cable, and try again.
	The DCS 200 Camera SCSI ID is set improperly.	Reset the DCS 200 Camera SCSI ID so that it is different from other devices connected to the computer. To do so, turn off the DCS 200 Camera, then the computer. Reset the DCS 200 Camera SCSI ID. Restart.
	You have connected the DCS 200 Camera to a different computer (or to the same computer to which you previously connected an additional SCSI device), resulting in a SCSI ID conflict.	Reset the DCS 200 Camera SCSI ID so that it is different from other devices connected to the computer. To do so, turn off the DCS 200 Camera, then the computer. Set the DCS 200 Camera SCSI ID to a unique value. Restart.

continued

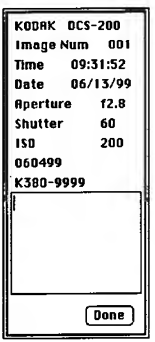
Message	Possible Cause	Suggested Solution
continued from previous page "The camera was not found. Try the following. • Wake up Camera • Turn on Camera power • Check all cables • Check for SCSI ID conflict • Check for dead batteries. • Switch to an archive file."	There are dead batteries in the camera back.	Turn off the camera, replace the batteries, and try again.
	You have deliberately chosen the driver when no camera was connected with the intention of working with images in an archive file.	Click "Switch to File" and open an archive file from your computer hard disk.
"The camera was not found. Try the following. • Wake up Camera • Turn on Camera power • Check all cables • Check for SCSI ID conflict • Check for dead batteries.	Same as previous message.	Similar to the previous message; however, you are not able to switch to an archive file. This can appear when you have held the Control key while choosing the driver from the Acquire submenu. (In this instance you are not able to switch to an archive file.)
"The Color Alignment Rectangle could not be auto selected. Color balance must be performed for auto selection to work properly. The Color Alignment Rectangle must be moved manually to be able to align image during acquire."	The software could not find a good horizontal and vertical edge. (This message can appear only while using the KODAK Color Filter Wheel Accessory.)	Color balance the image, and try again. If this does not work, move the Color Alignment Rectangle manually, and try again.

Message	Possible Cause	Suggested Solution
"The External Hard Drive was not found. Switching Source back to Camera."	You have changed the Source to EXT Disk, but the driver cannot find the external disk.	Repeat the steps for making this connection presented in the tabbed section "Using an external hard disk."
"The External Hard Drive was not found. Switching Source back to File."	You have changed the Source to EXT Disk, but the driver cannot find the external disk.	Repeat the steps for making this connection presented in the tabbed section "Using an external hard disk."
"There is no Last Image and no Images on the DCS 200."	You are trying to acquire an image (by holding down the command key while choosing KODAK DCS 200 from the Acquire submenu) and there are no images on the hard disk — if present — or in DRAM if using a camera without a hard disk.	Take a picture(s) and try again, or work with images from an archive file.
"This archive file is corrupted."	An unusual condition is detected when reading an archive file from your hard disk.	You will not be able to access images from this file.
"This driver is not compatible with the Camera. Please get a newer Driver."	The driver you are using is outdated and will not work with the current version of the DCS 200 Camera.	Install the newest driver and try again.

Message	Possible Cause	Suggested Solution
"This Driver will not work on a Macintosh with a 68000 processor."	The driver will not work on older Macintosh computers.	You will not be able to use the driver on this computer; run the driver on a supported computer. Refer to "Required Computer Hardware" on page 1-3.
"This driver requires 32-Bit QuickDraw to operate."	You are working with a supported Macintosh computer but the 32-Bit QuickDraw file is missing.	Install or reinstall 32-Bit QuickDraw.
	The driver will not work on older Macintosh computers that do not have 32-Bit QuickDraw.	You will not be able to use the driver on this computer; run the driver on a different computer.
"This option cannot be selected until the firmware in the DCS 200 has been updated using the Update Camera Firmware button with firmware dated 10/29/92 or later."	You are not using the latest camera firmware.	Update your camera firmware (refer to "Updating Camera Firmware in the DCS 200 Camera" on page 4-39). If the problem persists, refer to "Appendix A: Updating Your Kodak Software Driver," obtain updated software, and update your software and firmware.

Troubleshooting — Kodak Driver for Adobe Photoshop Software

Trouble	Possible Cause	Suggested Solution
The Acquire command on the File menu is dimmed, meaning that you cannot access the KODAK DCS 200 camera choice.	The KODAK DCS 200 driver is not in the same folder as the Adobe Photoshop PS Prefs file.	Quit Photoshop, copy the KODAK DCS 200 driver from the KODAK Driver for ADOBE PHOTOSHOP Software diskette into the folder with the Photoshop PS Prefs file, run Photoshop, and try again.
The KODAK DCS 200 camera choice does not appear on the Acquire submenu.	The KODAK DCS 200 driver is not in the same folder as the Adobe Photoshop PS Prefs file.	Quit Photoshop, copy the KODAK DCS 200 driver from the KODAK Driver for ADOBE PHOTOSHOP Software diskette into the folder with the Photoshop PS Prefs file, run Photoshop, and try again.
The Update Camera Firmware button is dimmed when you want to use it.	The Source is not Camera.	Make sure the camera is connected properly to the computer, change the Source to Camera and try again.
	You cannot update firmware in some cameras when connected to some Macintosh PowerBook computers.	Update camera firmware by connecting that camera to another Macintosh computer model. If further assistance is needed, contact Kodak.

Trouble	Possible Cause	Suggested Solution
The camera freezes when it goes to sleep while connected to a Macintosh PowerBook computer.	You are not using the latest software and camera firmware.	Update your software and camera firmware. Refer to "Appendix A: Updating Your Software Driver," obtain updated software, and update your software and firmware (refer to "Updating Camera Firmware in the DCS 200 Camera" on page 4-39.)
The time and/or date in the information box for an image(s) is incorrect. 	The computer system clock from which the clock in the camera was set, contained an incorrect time and/or date.	Reset the computer system clock. Connect the DCS 200 to your computer, run the driver, and reset the clock in the camera using the Set Clock choice on the Control Panel.
	The internal clock battery (a permanently-installed separate battery in the camera back) is low.	Leave good batteries in the camera back for several days to charge the internal battery.

Trouble	Possible Cause	Suggested Solution
You are unable to open the software driver when you choose its name from the Acquire submenu while the camera is connected to the computer.	The firmware in the camera has become corrupted.	Update camera firmware as described on page 7-16.
You are experiencing erratic camera behavior or unusual characters appear on the camera back liquid crystal display (LCD). You know the batteries are charged. You have tried to update the camera firmware but are unable to do so — perhaps the camera does not respond to the computer software driver.	The firmware in the camera has become corrupted.	Update camera firmware as described on page 7-16.
All acquired images have a consistent defect.	There is dirt or dust on the imager.	Clean the imager as described in "Cleaning the Imager" on page 6-55.
All acquired images have a magenta spot in the center of the image.	Some lenses have a hot spot, especially noticeable when you stop down.	Use a different lens or stop down less (use a larger aperture).
An undesirable color shift has occurred in saturated colors.	The image has been overexposed.	Underexpose for proper color saturation.

Trouble	Possible Cause	Suggested Solution
Acquired images have random defects.	The ISO setting is too high.	Take the picture again with a lower ISO setting.
	You are using a SCSI cable longer than those supplied with the DSC 200 Camera.	Use only the supplied or specified cables.
Images are consistently too light or too dark.	The gamma for your monitor is not calibrated properly.	Calibrate the gamma for your monitor as explained in the Adobe Photoshop manual.
The camera regularly goes to sleep when it should stay awake while connected as the sole device to a "newer" Macintosh computer model.	Incorrect SCSI termination has been used.	Follow the steps in "Making the SCSI Connection" on page 4-9.
The Macintosh computer crashes when the camera is attached.	There is a SCSI ID conflict.	Reset the SCSI ID on the camera as described in "Setting the SCSI ID on the DCS 200 Camera" on page 4-3.
The Macintosh computer crashes as the camera is disconnected.	You have disconnected the camera from the computer while they are both on.	Turn off the power for the camera and shut down the computer before disconnecting the camera from the computer.

Trouble	Possible Cause	Suggested Solution
The Macintosh computer crashes or you lose files or folders from your Macintosh hard disk.	You are using System 7.0 or System 7.0.1 and are not using the System Tuner version 1.1.1 or higher.	Put the System Tuner version 1.1.1 or higher in you System Folder to ensure that you have the most current version of the operating system, or consider upgrading to System 7.1.
"Fresh" batteries have quickly become exhausted while the camera is connected to the Macintosh computer; the AC battery charger/adapter is not being used.	When the camera is connected to a Macintosh computer, and the software driver window is opened, the camera will not go to sleep. This can exhaust the batteries in the camera back. (Perhaps you left the camera and computer on for an extended period while attending to other business.)	Recharge the batteries in the camera back, or replace the batteries in the camera back with charged batteries. We recommend that you operate the camera from the AC battery charger/adapter when connected to a Macintosh computer.
You click the Take Picture button, but no picture is recorded.	The camera hard disk or external hard disk is full (the disk indicator is flashing).	Delete images from the hard disk, use an external disk drive if one has not been attached, or use a different external hard disk if the one that is attached is full.
	The camera is off.	Turn on the camera.
	The camera is not awake.	Wake the camera and try again.

Trouble	Possible Cause	Suggested Solution
When shift-clicking on images in the image window (you are trying to add or remove an image from the selection), every click is not recognized and does not select or deselect an image.	The Double-Click Speed for the mouse — in the Apple menu (🍎) Control Panel(s) — is set at a low speed.	Choose Control Panel(s) from the Apple Menu, and choose the fastest Double-Click Speed for the Mouse. Allow more time between each of your mouse clicks.
The Delete and Move to File buttons are dimmed when the Source is File and you have images selected.	The archive file is locked.	If you want to modify the archive file by deleting images, you must unlock the file first.